

العمارة البيزنطية

# Byzantine Architecture

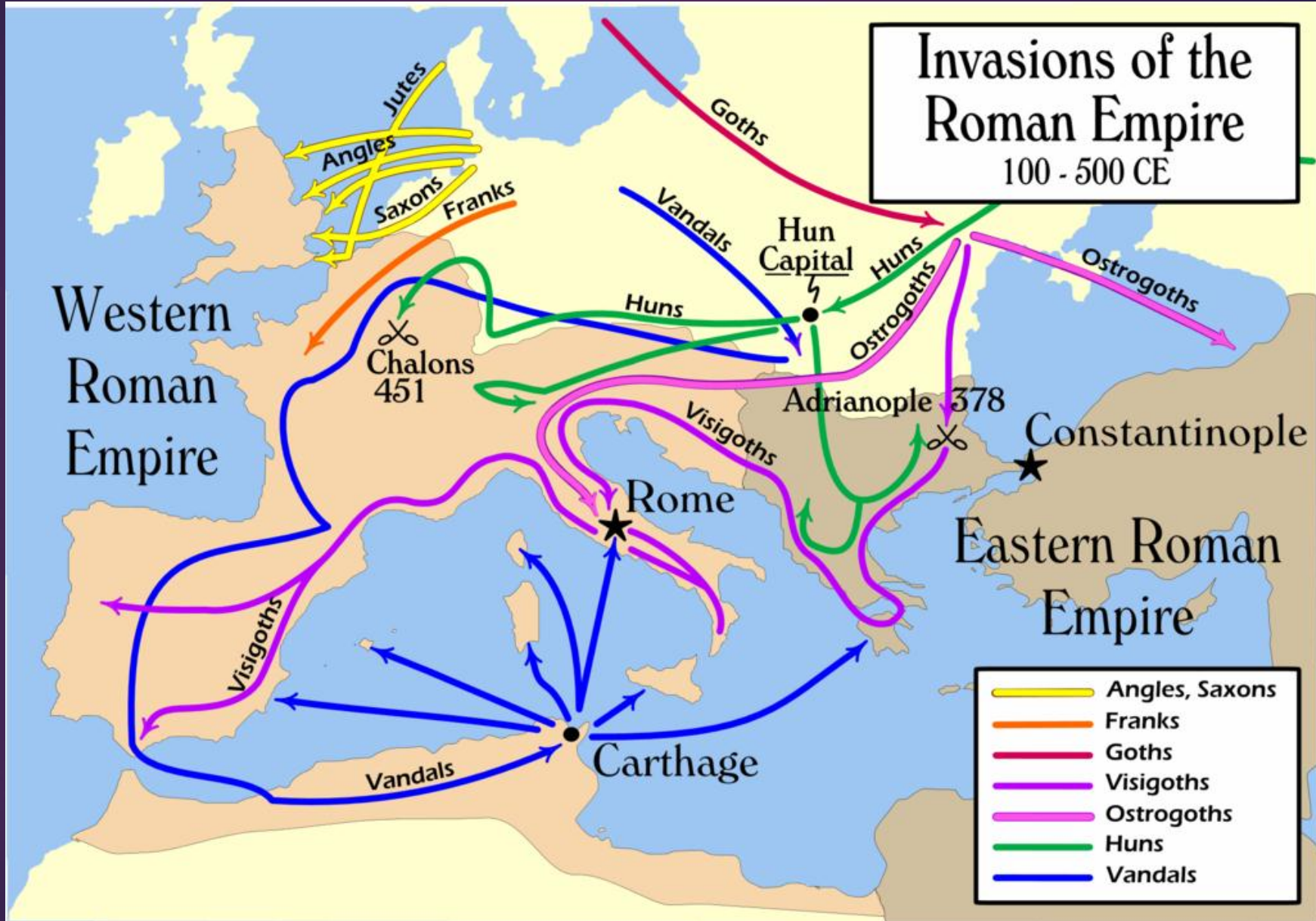
Dr. Kamal Elgabalawy

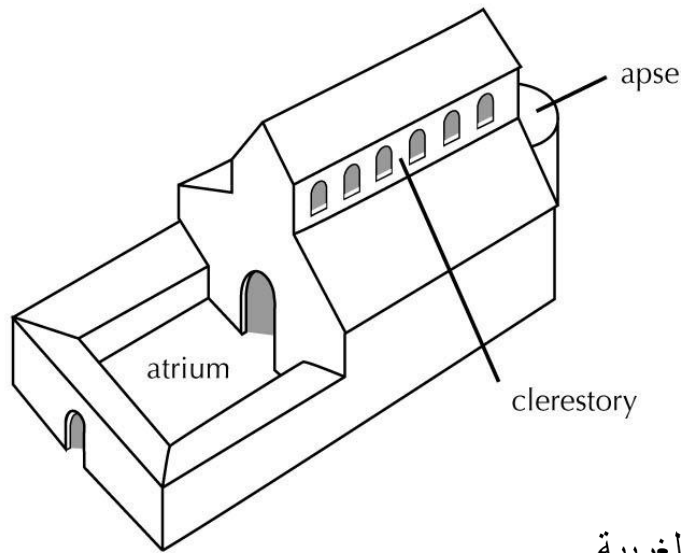
**THE REFERENCES TO MULTIPLE SOURCES ARE TEXT & FIGURES**

**(SKETCHES, DRAWINGS, PICTURES, PHOTOS,...ETC.)**

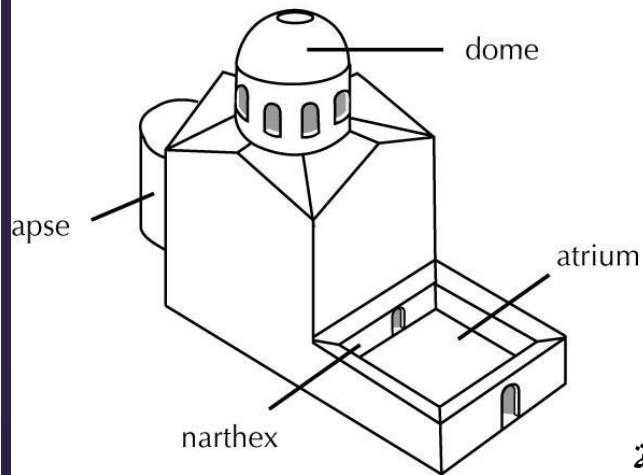
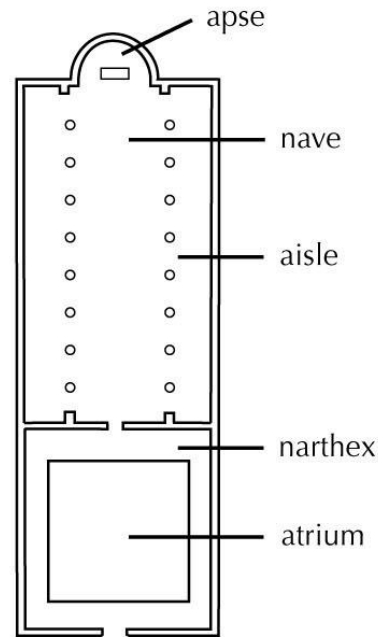
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# Invasions of the Roman Empire 100 - 500 CE

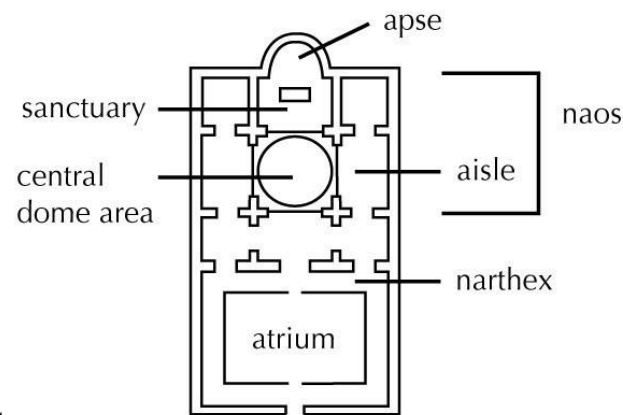




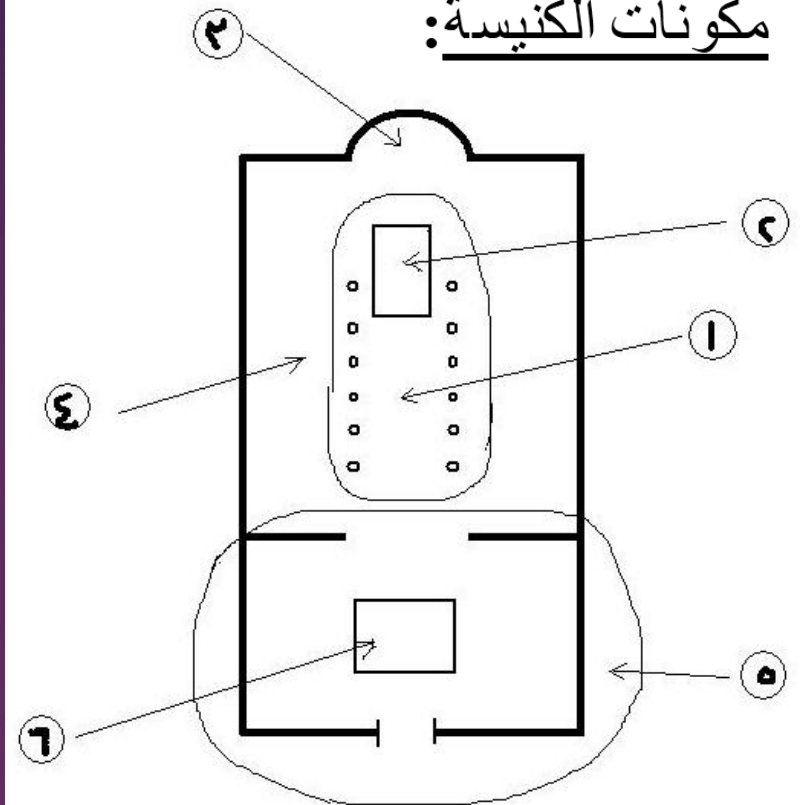
الامبراطورية الغربية  
basilica-plan church



الامبراطورية الشرقية  
central-plan church

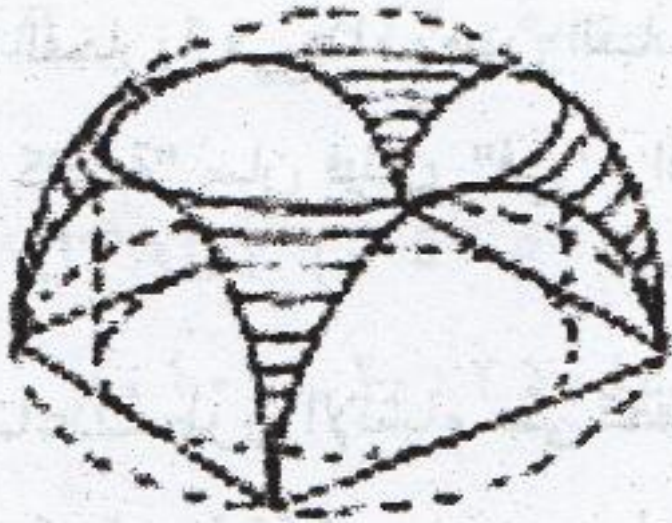


## مكونات الكنيسة:

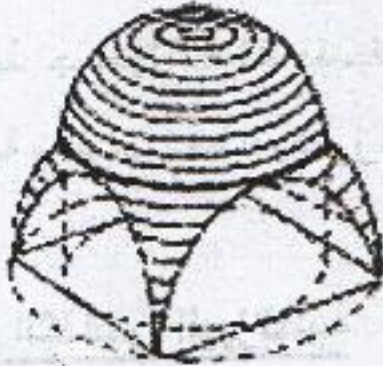


- ١ - الصحن الرئيسي (nave)
- ٢ - منطقة المرتلين (chair)
- ٣ - منطقة القبلة (sanctuary)
- ٤ - الممرات الجانبية (aisles)
- ٥ - رواق الحماية (narthex)
- ٦ - الفناء الداخلى (atrium)

# Simple Dome

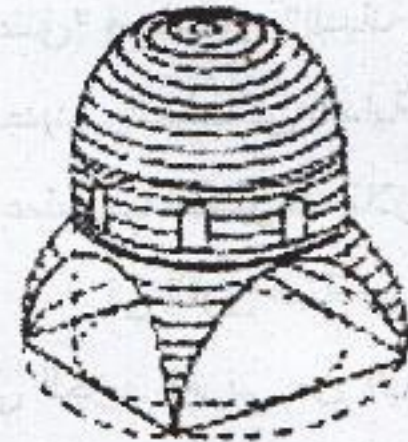


# Dome supported on pendentive



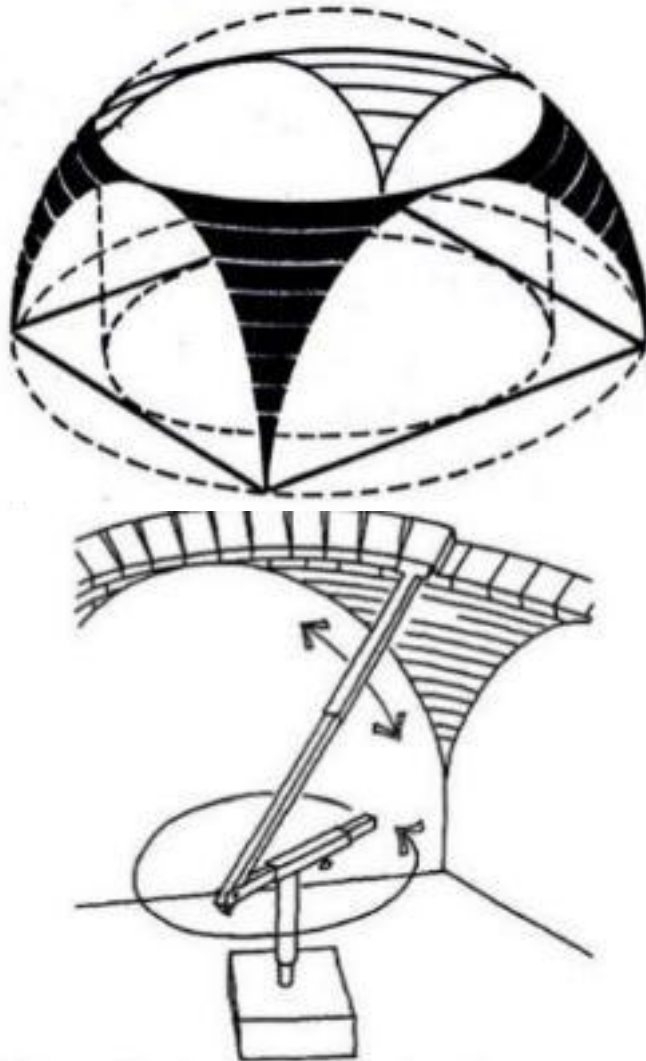
Dome on independent pendentive

# Dome with drum



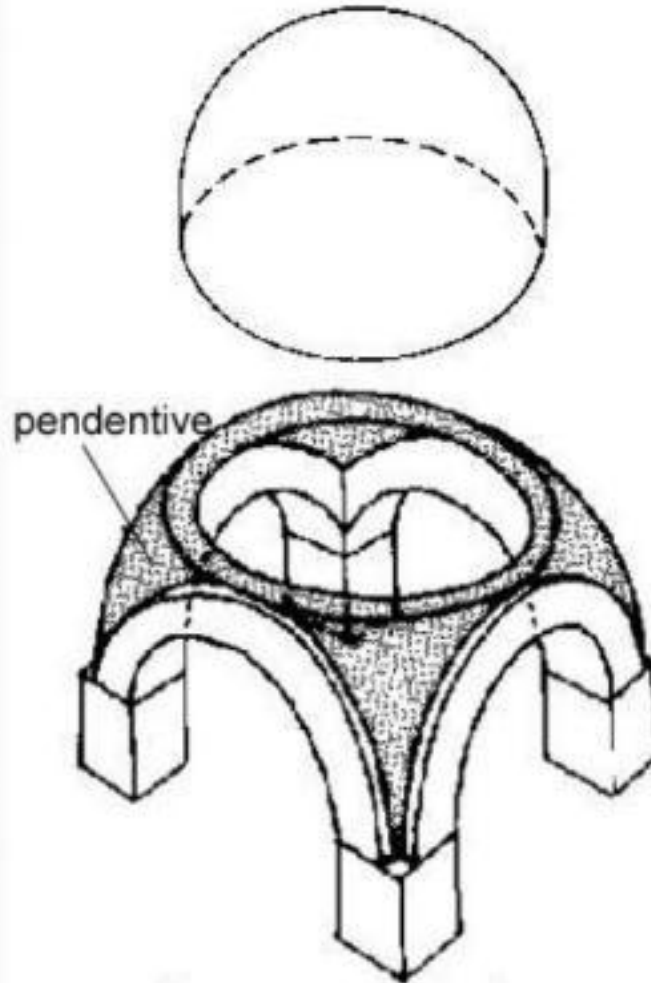
Section through the dome of the drum of masonry showing thickness of lower dome to form pseudo-drum

# Simple Dome



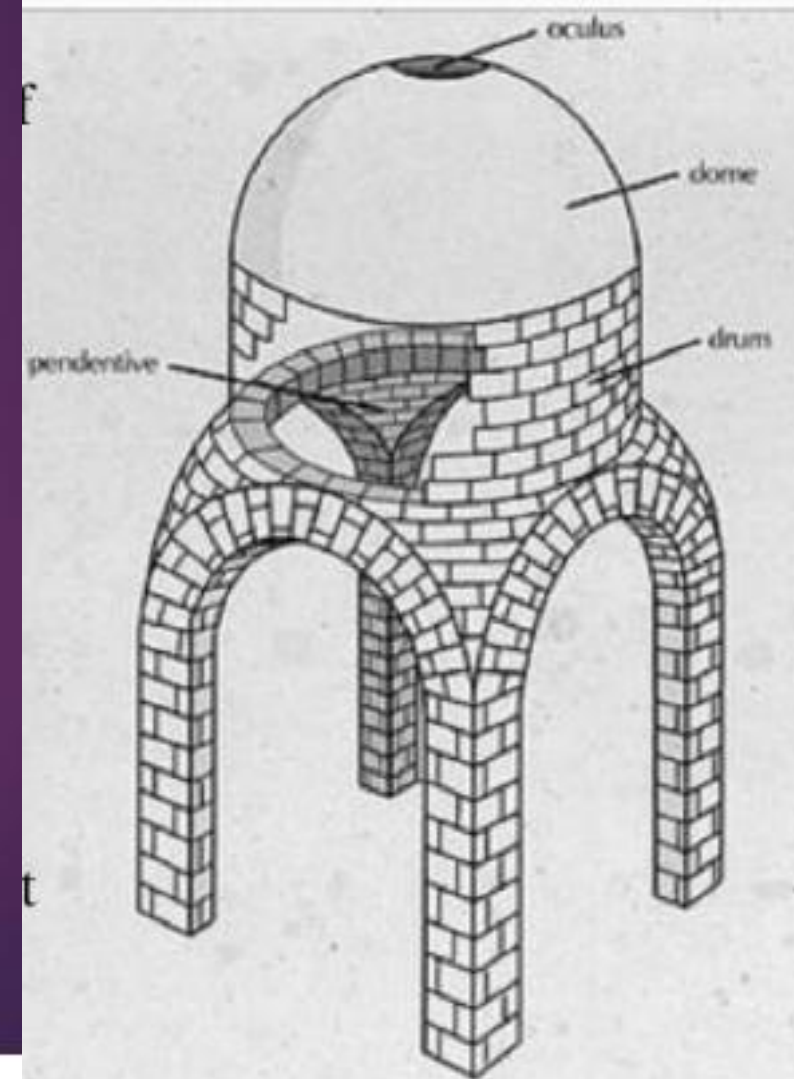
building of a dome on pendentives

# Dome supported on pendentive



Dome supported on pendentives

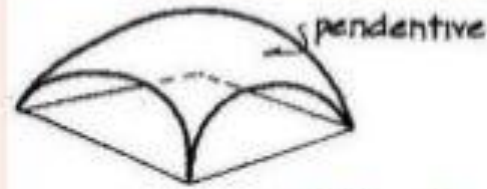
# Dome supported on squinches



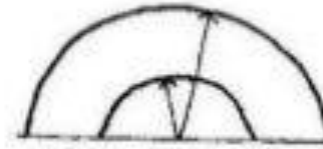
dome on pendentives

### a. Simple

Pendentives and domes are part of the same sphere.

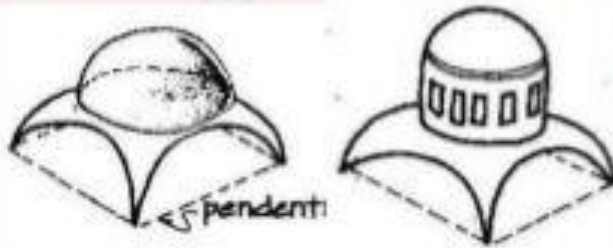


a. Simple



### b. Compound

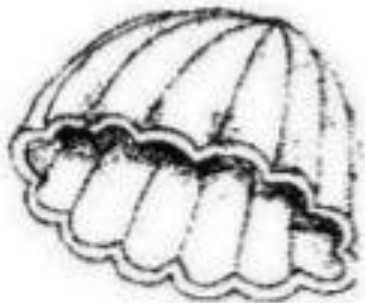
1. The dome is not part of the same sphere as the pendentives and domes rises independently upon them.
2. The dome is raised on a high drum pierced with windows.



b. Compound



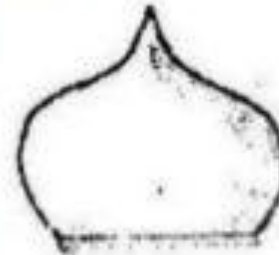
### c. Special designs



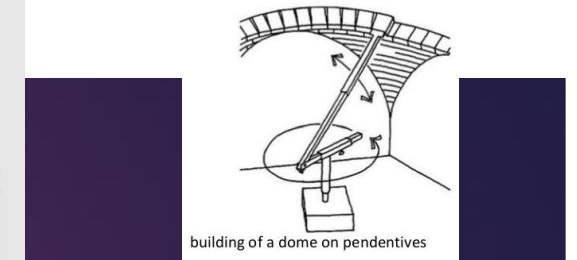
1. melon dome- dome with convolutions



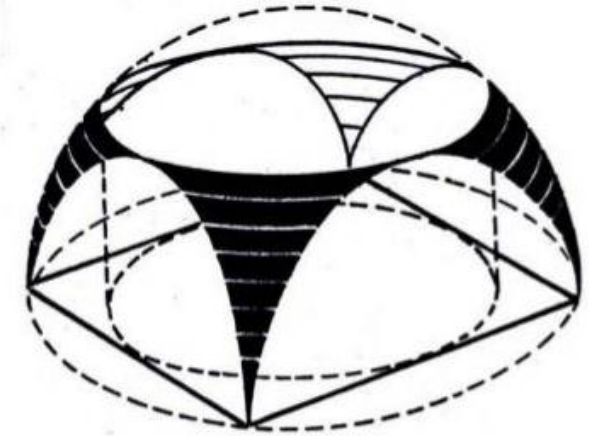
2. Serrated



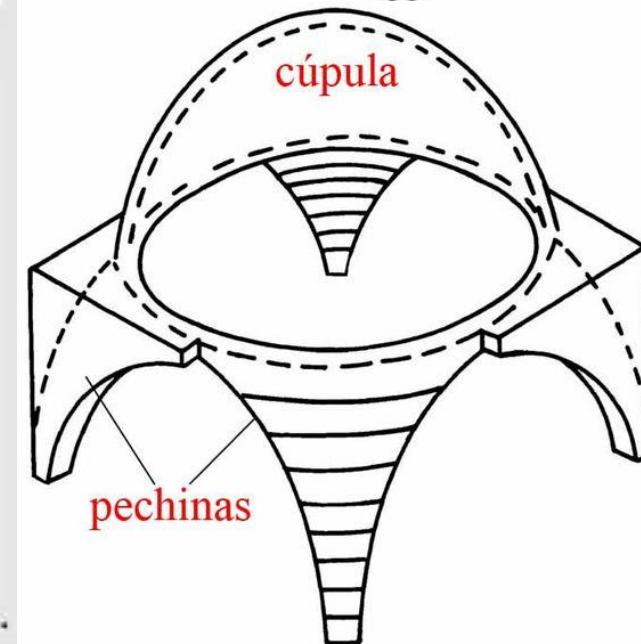
3. Onion or Bulbous sharp



building of a dome on pendentives



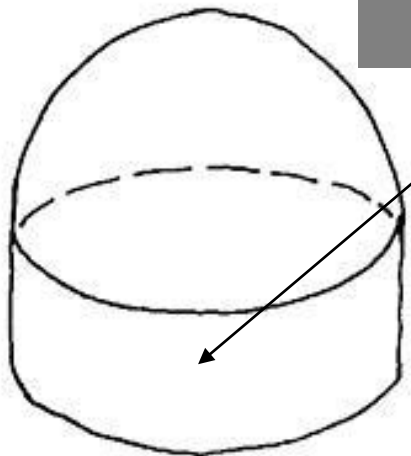
the p



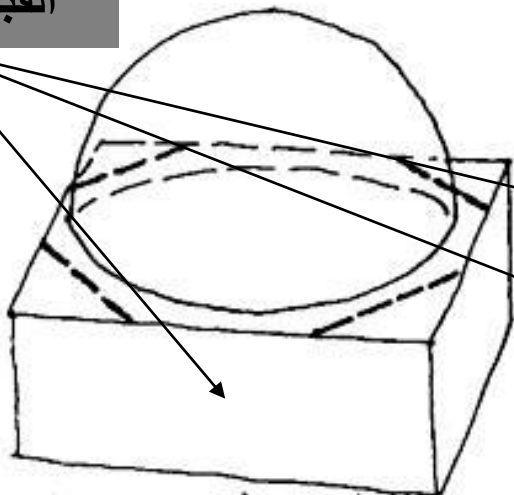
cúpula

pechinas

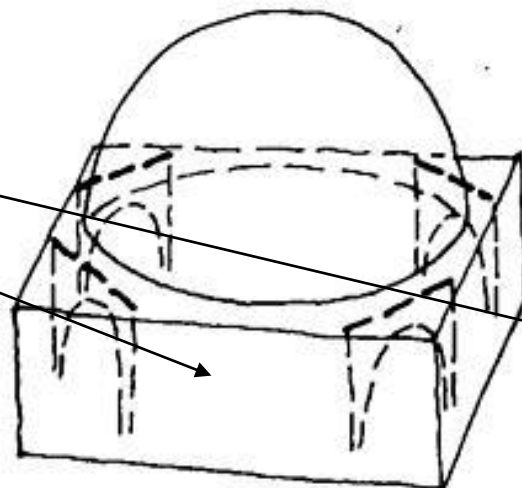
### القبة على رقبة



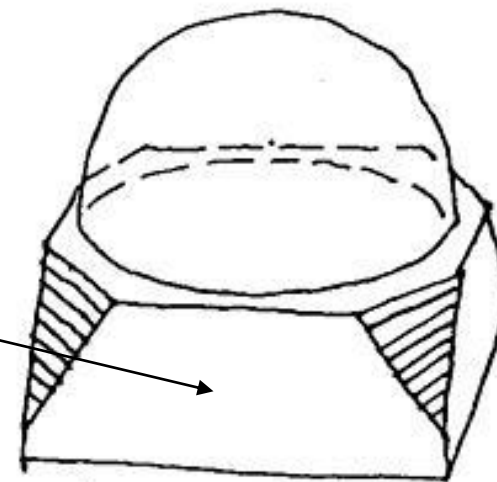
a dome over a circular space  
raises no structural problem -  
only the problem that it  
restricts the plan form.



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

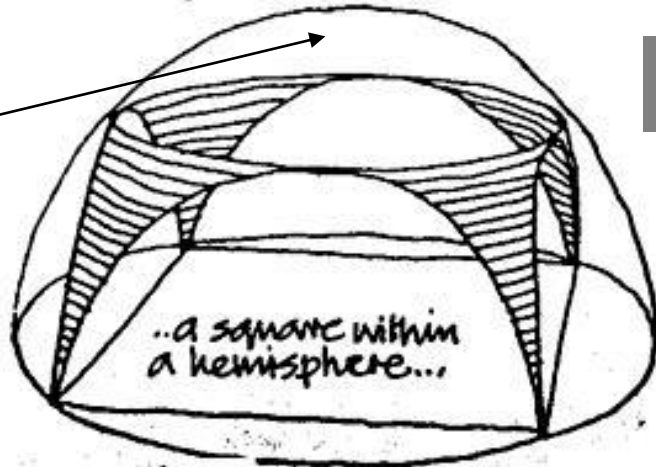


... by putting 'squinch'  
arches over the corners..



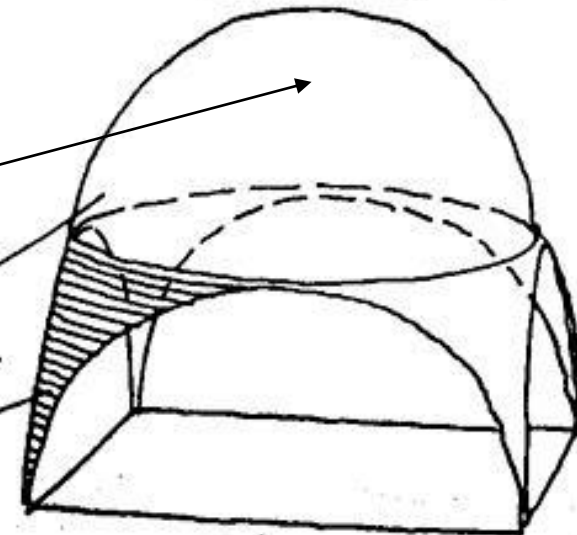
... or by corbeling-out.

### القبة البسيطة



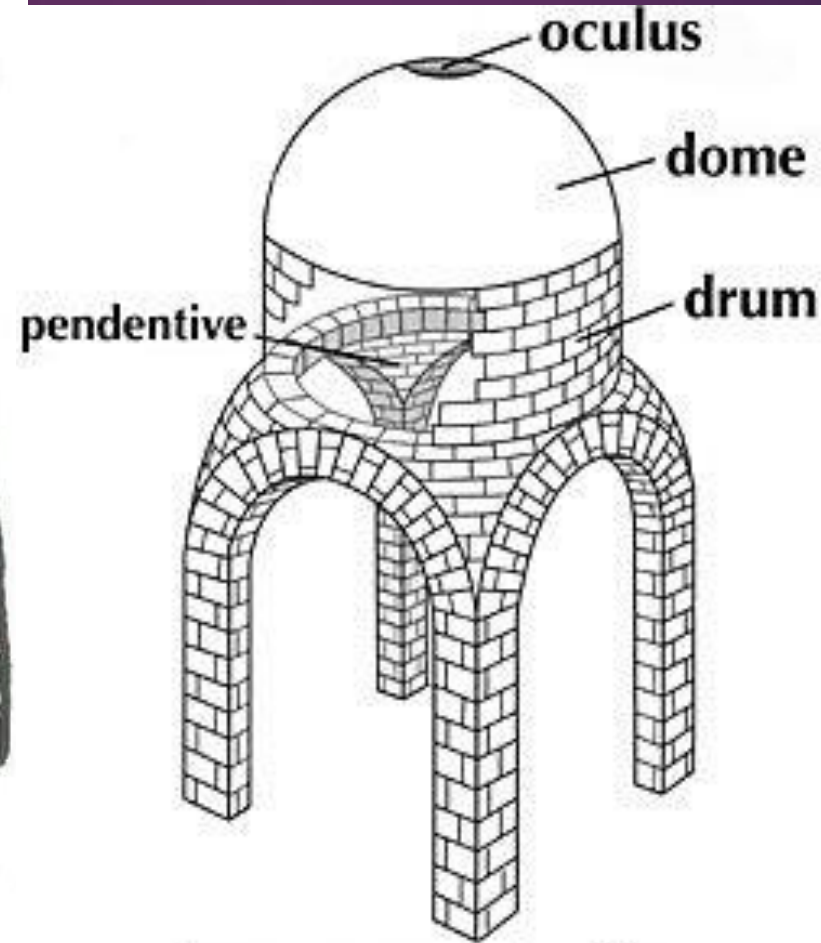
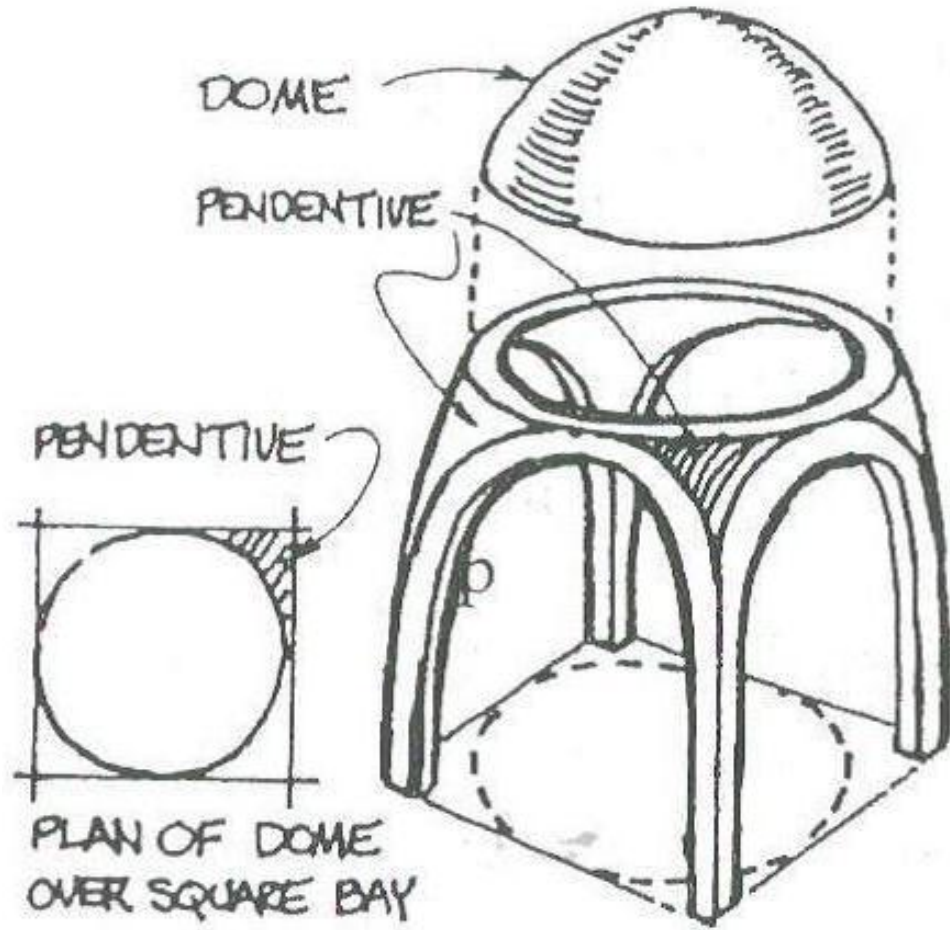
... a square within  
a hemisphere...

### القبة المركبة

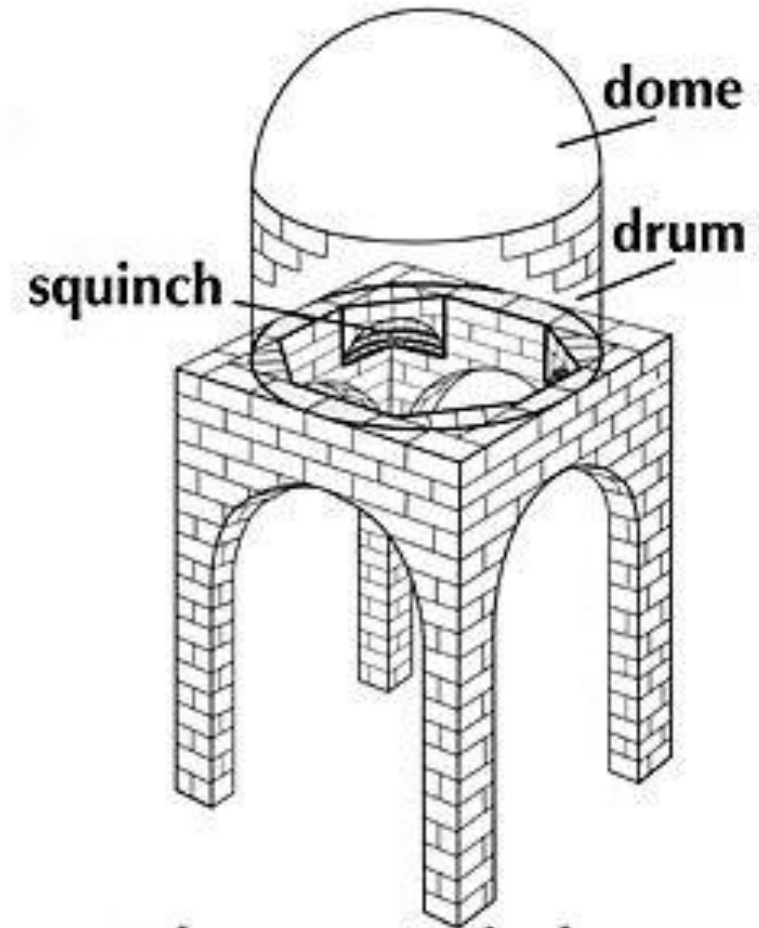


... on top of which the  
dome is placed. The  
plasticity of the  
pendentive is very  
appropriate to brick  
construction

# BYZANTINE CONSTRUCTION



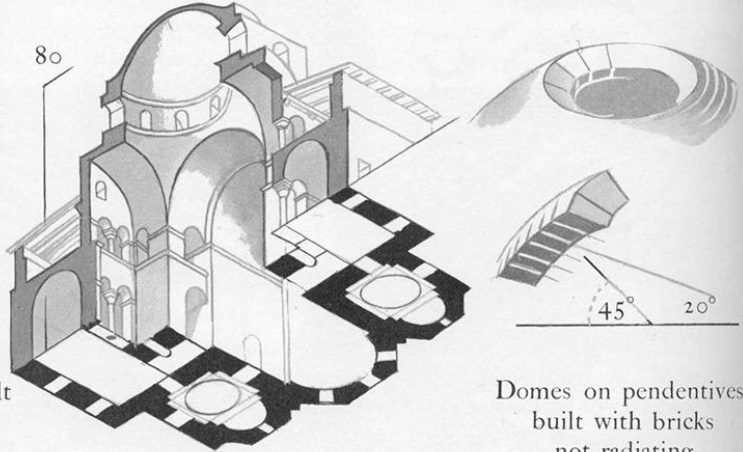
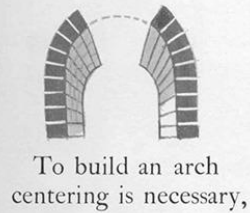
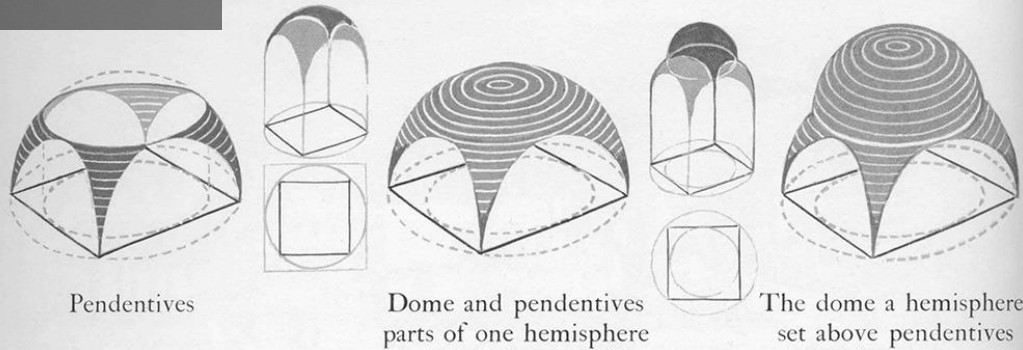
dome on pendentives



dome on squinches



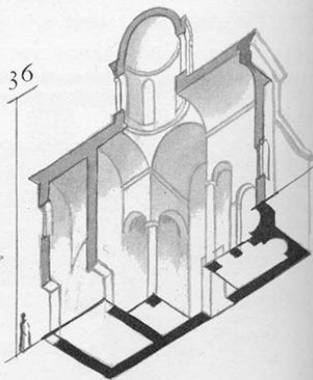
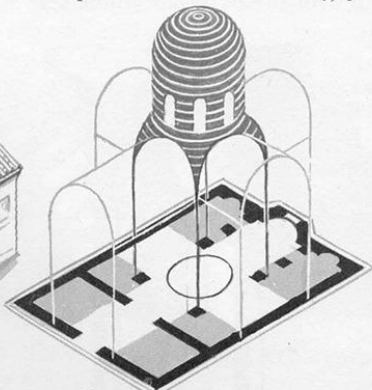
# DOME



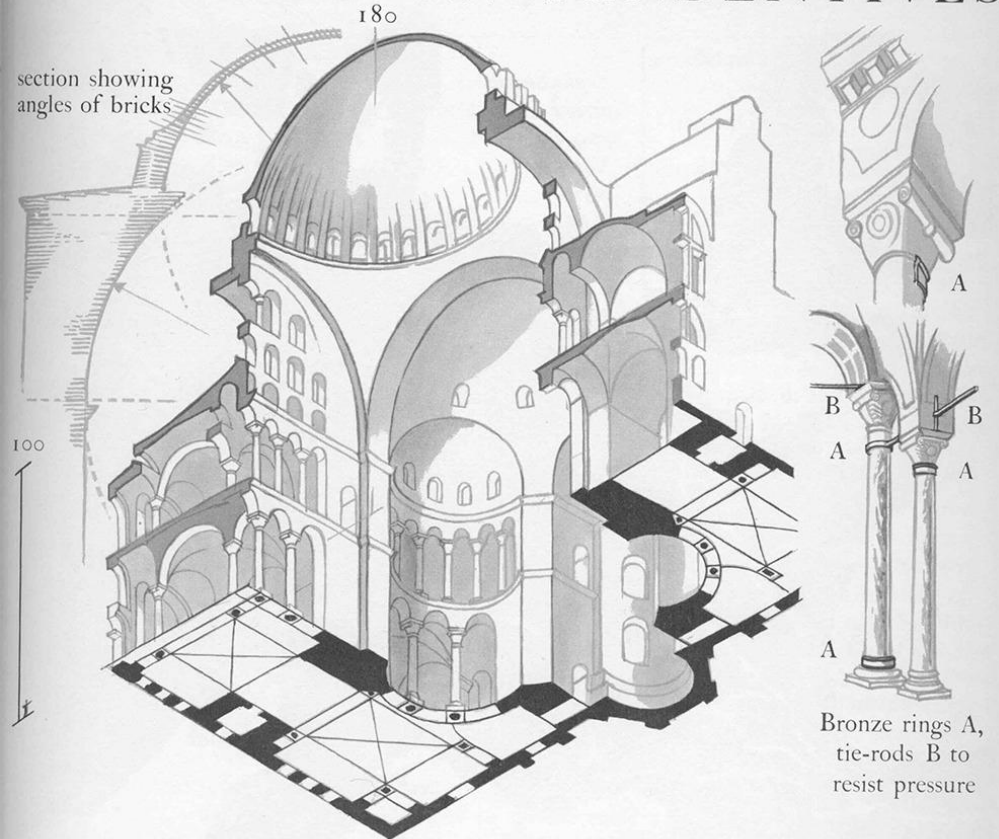
S. Sophia, Salonika, c. A.D. 495



Metropole Athens, A.D. 1250

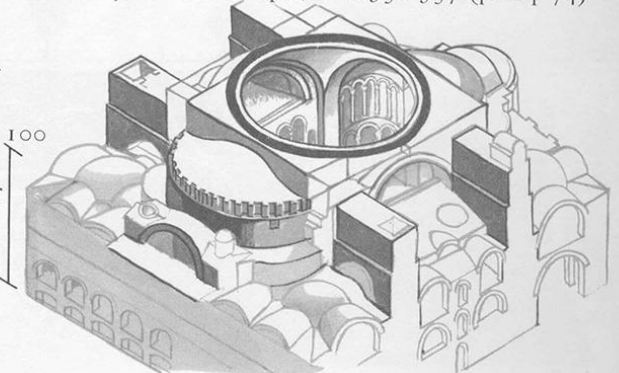


# DOMES ON PENDENTIVES

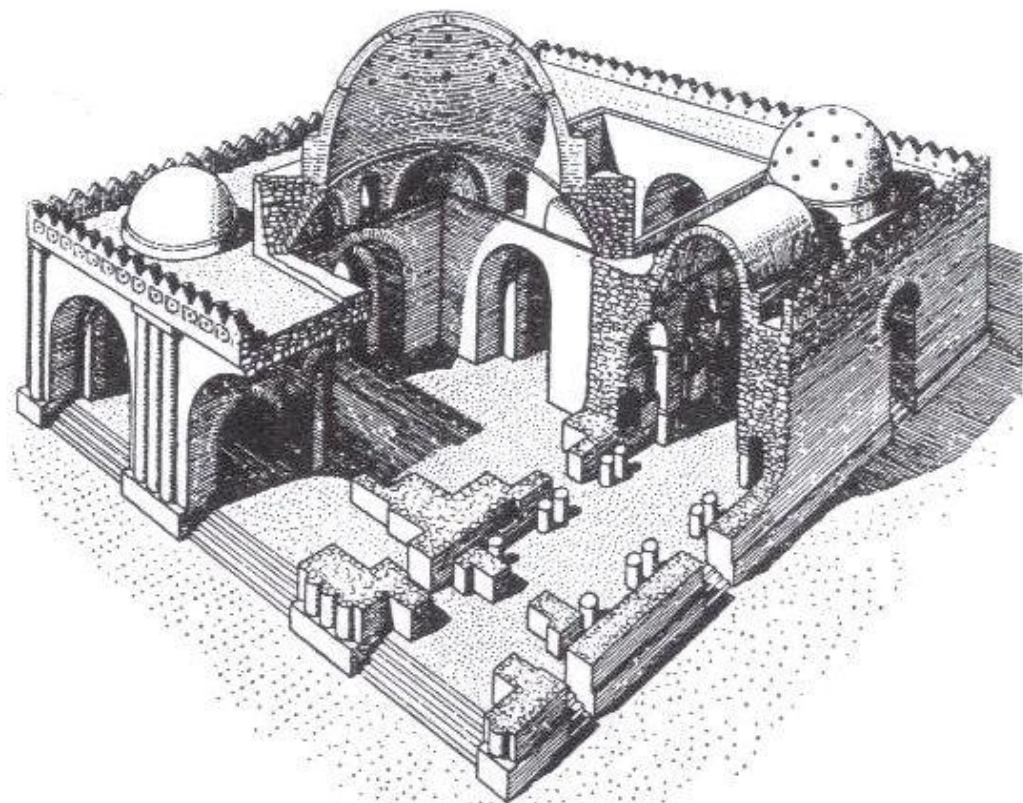


S. Sophia (Hagia Sophia = divine wisdom), Constantinople, A.D. 532-537 (plan p.74)

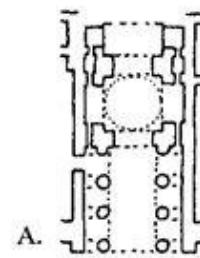
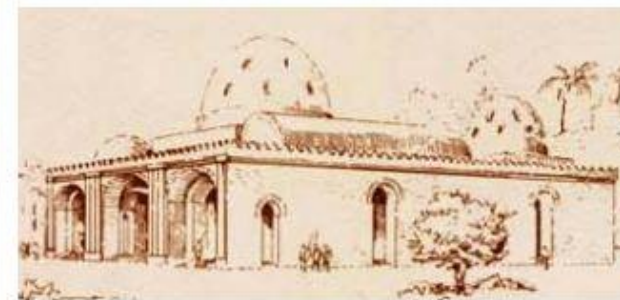
Built for Justinian by two Greek architects, Anthemius of Tralles and Isidorus of Miletus. Built of brick; the dome probably erected without centering, with bricks about 24-27 inches square and 2 inches thick laid in deep mortar and covered with  $\frac{1}{4}$  inch lead; the dome supported on 4 piers,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



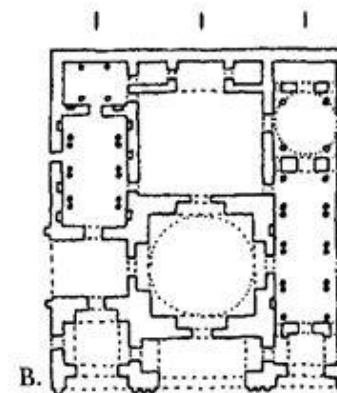
Palace at Sarvistan, 420-38, by Bahram V



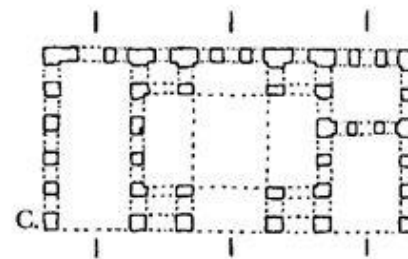
Sarvistan, reconstruction



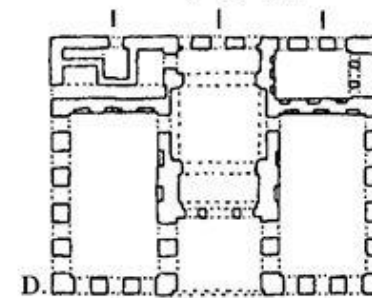
0 5 10 m



0 5 10 m



0 5 10 m



0 5 10 m

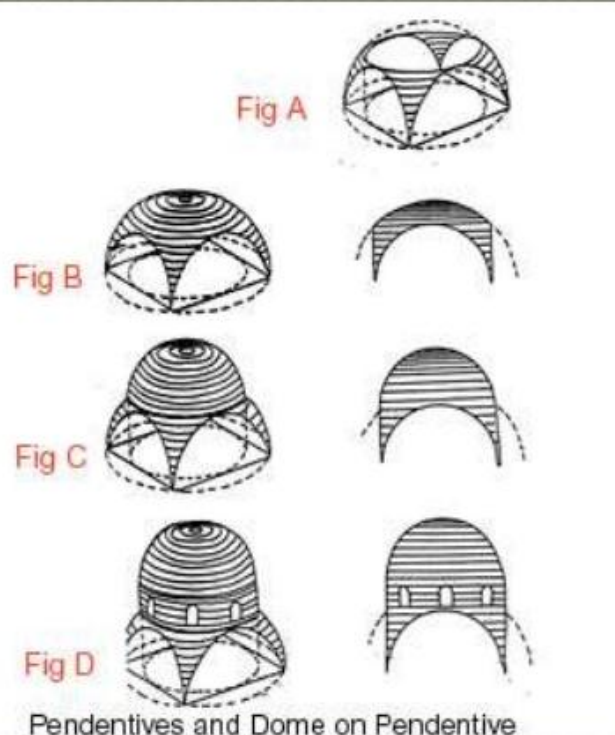
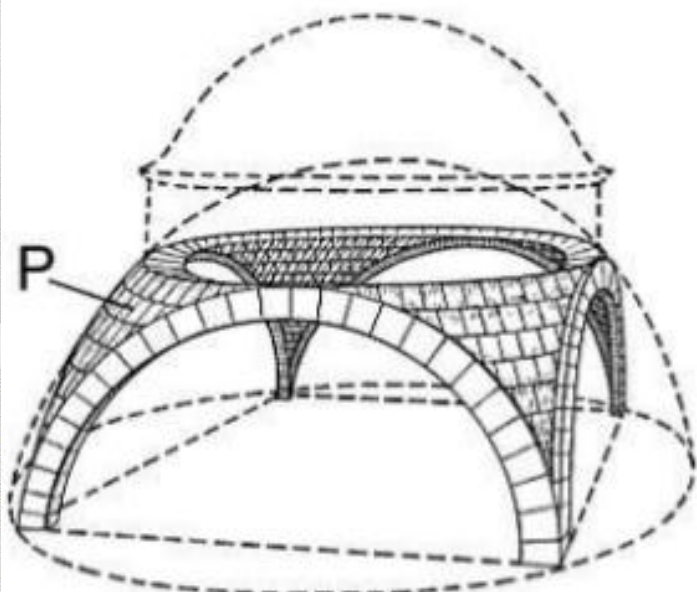
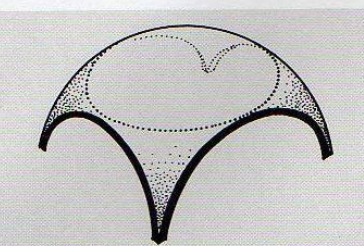
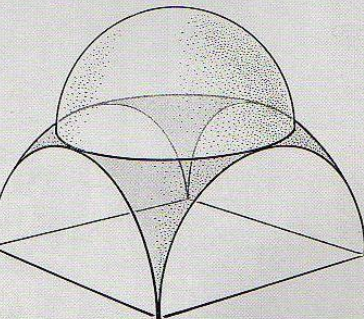
ARCHITECTURAL VOCABULARY  
IN PERSIAN CIVILIZATION

# TYPES OF DOMES

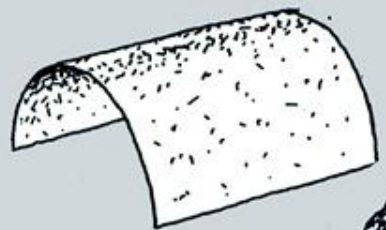
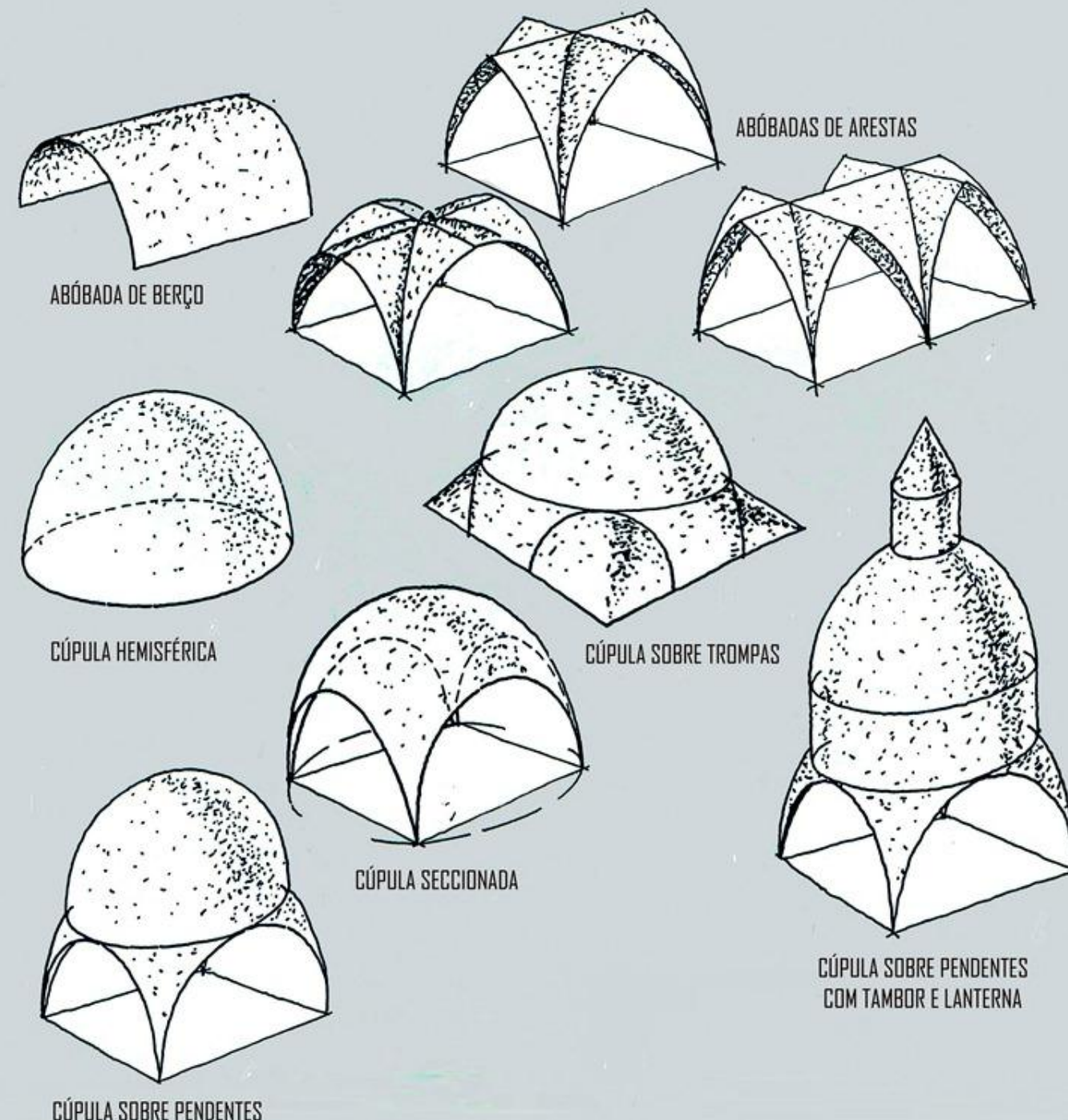
- Simple
- Compound
- Melon shaped
- Onion shaped.



## DOME & VOULT



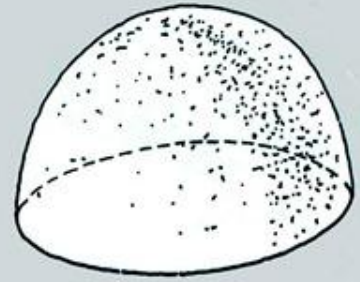
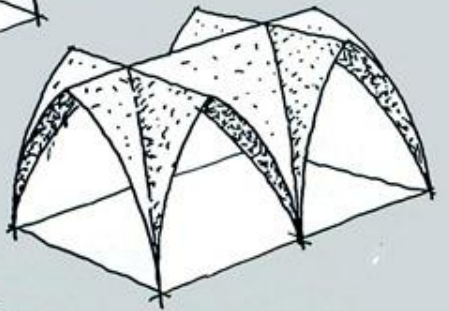
Pendentives and Dome on Pendentive



ABÓBADA DE BERÇO



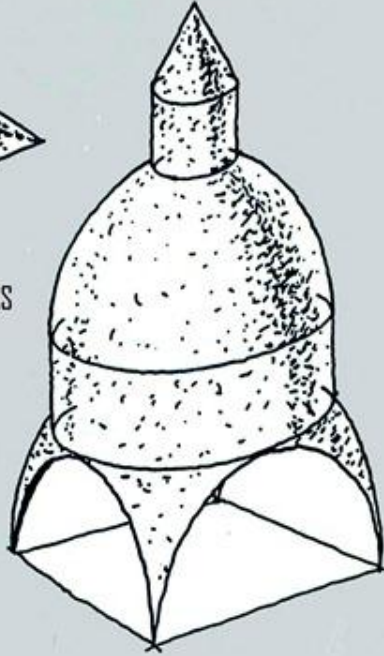
ABÓBADAS DE ARESTAS



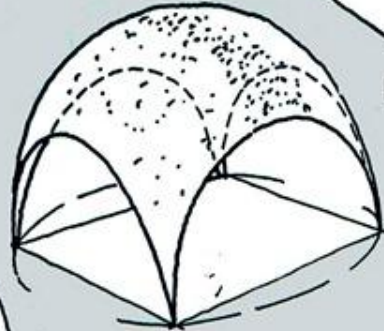
CÚPULA HEMISFÉRICA



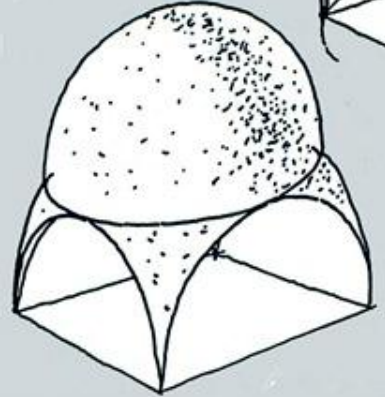
CÚPULA SOBRE TROMPAS



CÚPULA SOBRE PENDENTES COM TAMBOR E LANTERNA



CÚPULA SECCIONADA



CÚPULA SOBRE PENDENTES

العمارة البيزنطية

# Byzantine Architecture

*THANK YOU*

Dr. Kamal Elgabalawy

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