

Auralisation of Istanbul's acoustical heritage buildings

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INTRODUCTION

The auralisations were produced in the **ODEON Room Acoustics Software**, as part of the CAHRISMA project (2000-2003): *Conservation of the Acoustical Heritage by the Revival and Identification of the Sinan's Mosques Acoustics*.

Scientific project leader: prof. Zerhan Yuksel Karabiber (YTU).
Project coordinator: Prof. Jens Holger Rindel (DTU).

Participants:

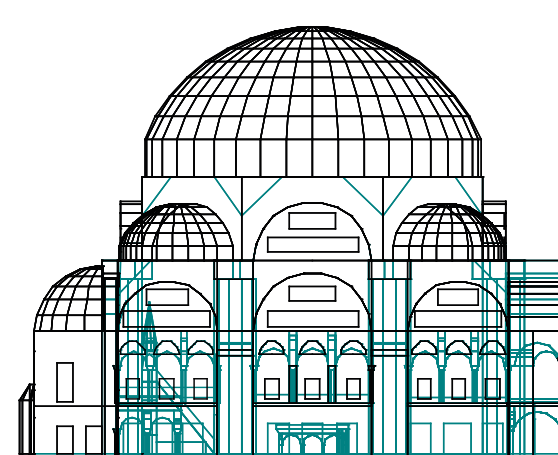
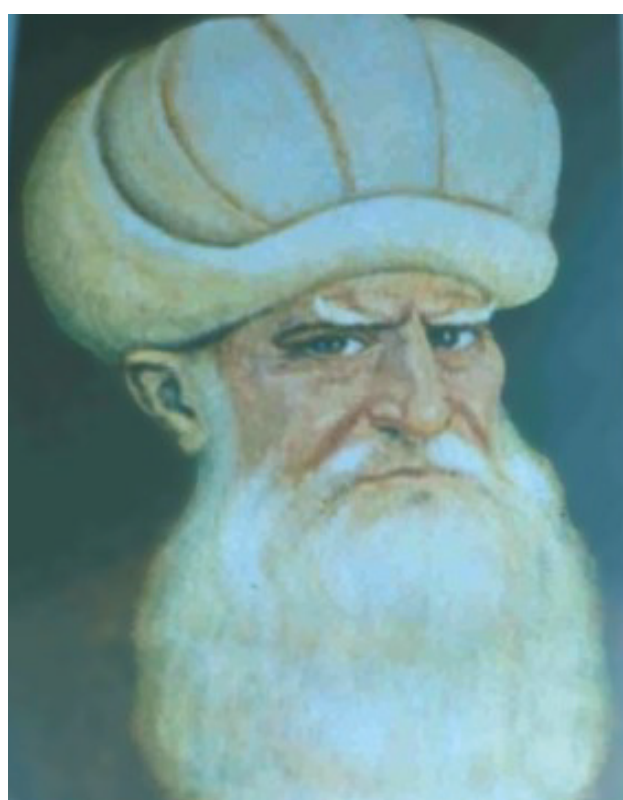
- DTU, Denmark.
- YTU, Turkey.
- UNIFE, Italy.
- EPFL, Switzerland.
- UNIGE, Switzerland.
- AEDIFICE, France.
- UOM, Malta.



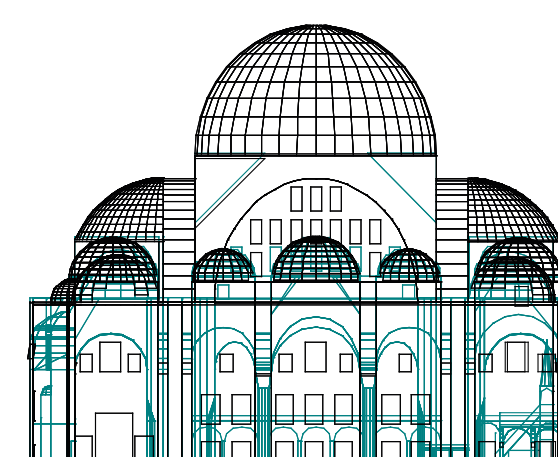
Project funded by the European Commission.

BUILDINGS

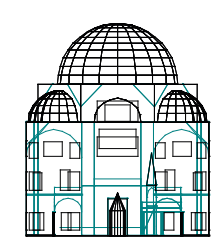
The buildings studied in the CAHRISMA project were designed or renovated by *Mimar Sinan* (1497 - 1588), the Ottoman Empire's most important architect.



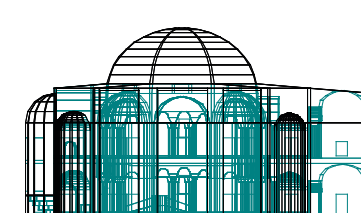
Selimiye in
Edirne (1575)



Süleymaniye (1557)



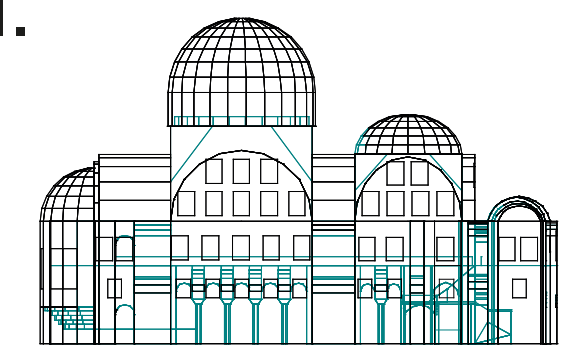
Sokullu (1572)



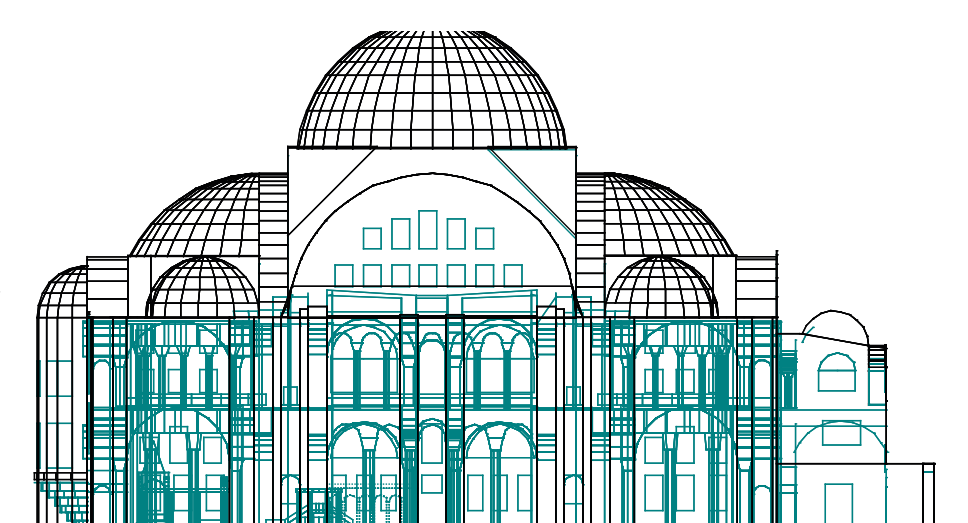
Ss. Sergius and
Bacchus (536)

Most buildings are located in **Istanbul**.

(2D wireframes shown to relative scale)



St. Irene (ca. 330, 548)



Hagia Sophia (537)

MEASUREMENTS & MODELLING



Hagia Sophia

In each building, impulse responses were measured at multiple source and receiver positions.



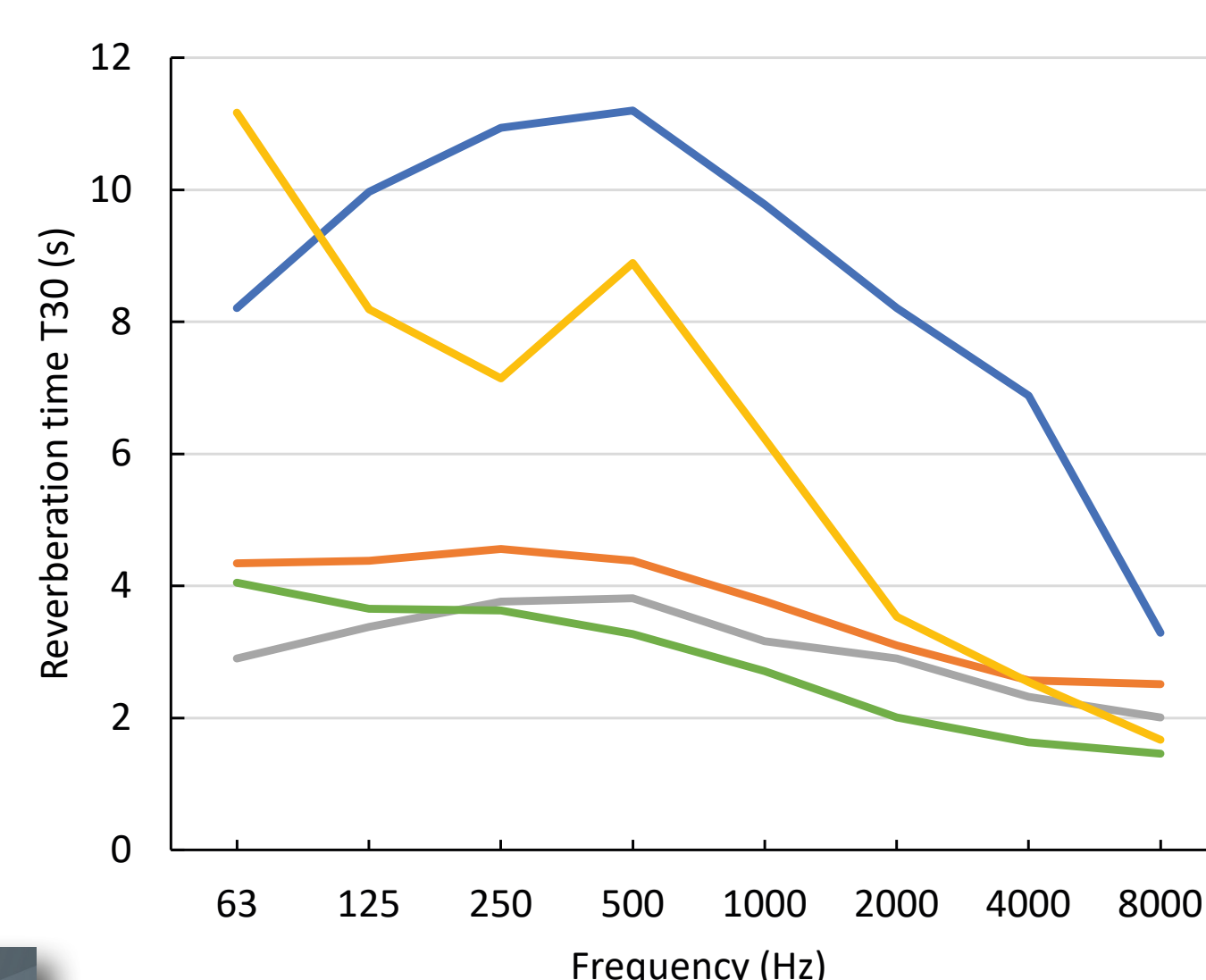
St. Irene



Hagia Sophia
in ODEON



St. Irene
in ODEON



Measured reverberation times at the different buildings.

Buildings (*with carpet on the floor)	Source x receiver positions	T _{30,mid} (s)
Hagia sofia	3 x 12	10.5
Hagia Irene	3 x 11	4.1
SS Sergius & Bacchus*	2 x 10	3.5
Suleymaniye*	3 x 12	7.6
Sokullu*	3 x 5	3.0

AURALISATIONS

Experience a set of **Movie auralisations** made in **ODEON 19**, using the measured Impulse Responses and the following anechoic recordings:

- *Anothen hoi prophetai* sung by L. Asteris.
- *Alleluia* sung by Dr. Chr. Troelsgård.
- *Ic Ezan* sung by solo/prayer.
- *Mimber Duasi* sung by a choir.

Find all **Movie auralisations** here:
odeon.dk/examples/cahrisma-project

