# ACOUSTICAL SIMULATION AND AURALIZATION

SAMPLE PROJECT REVIEW

www.wsdg.com

Southern Theater in
Gerasa, Jordan;
approx. 90 AD,
approx. 4000 seats

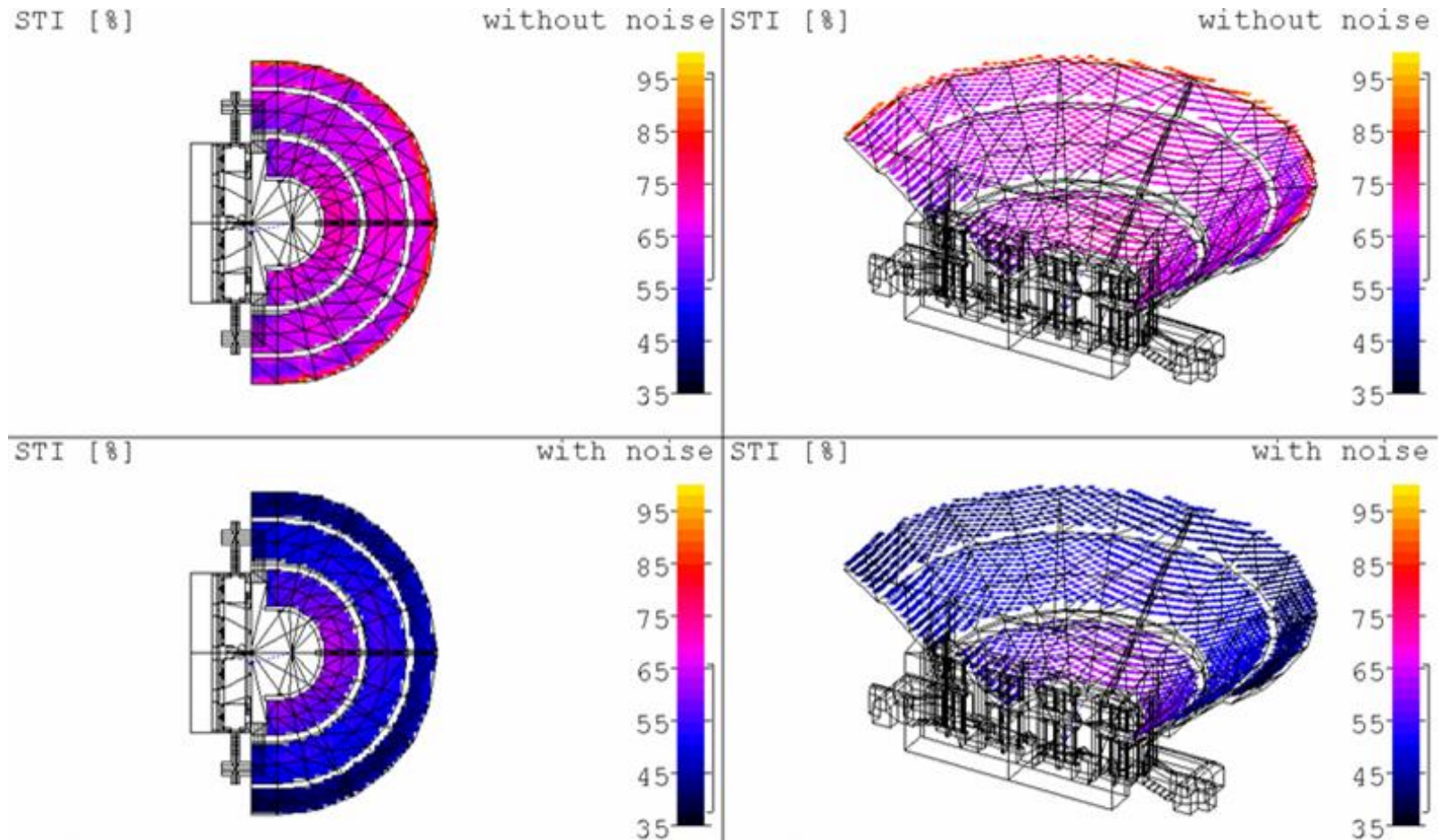Original building is not available
anymore – but it can be
modelled!

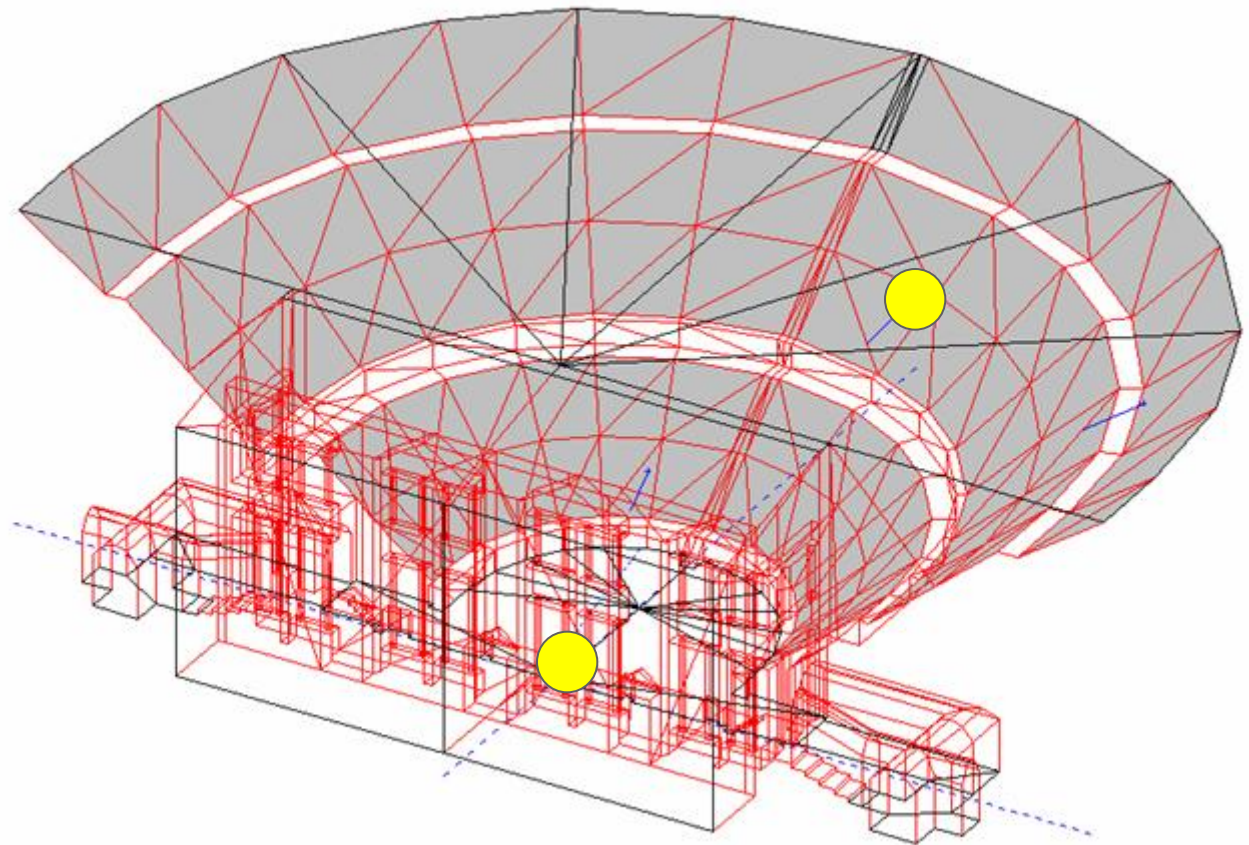Calculation of STI Speech Intelligibility in original building

www.wsdg.com

Simulation of

instrument sound

in original building

Guitar   0:15

Home Theater

In Planning Phase

Architect's First Material Buildout
Suggestion

Music 0:30

Improved Room Acoustics

Music 0:30

Existing Church

Planning of room acoustical revision to reduce RT60 Reverberation Time

Original State

Measured 0:08

Modified State

Measured 0:08

Original State

Male Voice 0:30
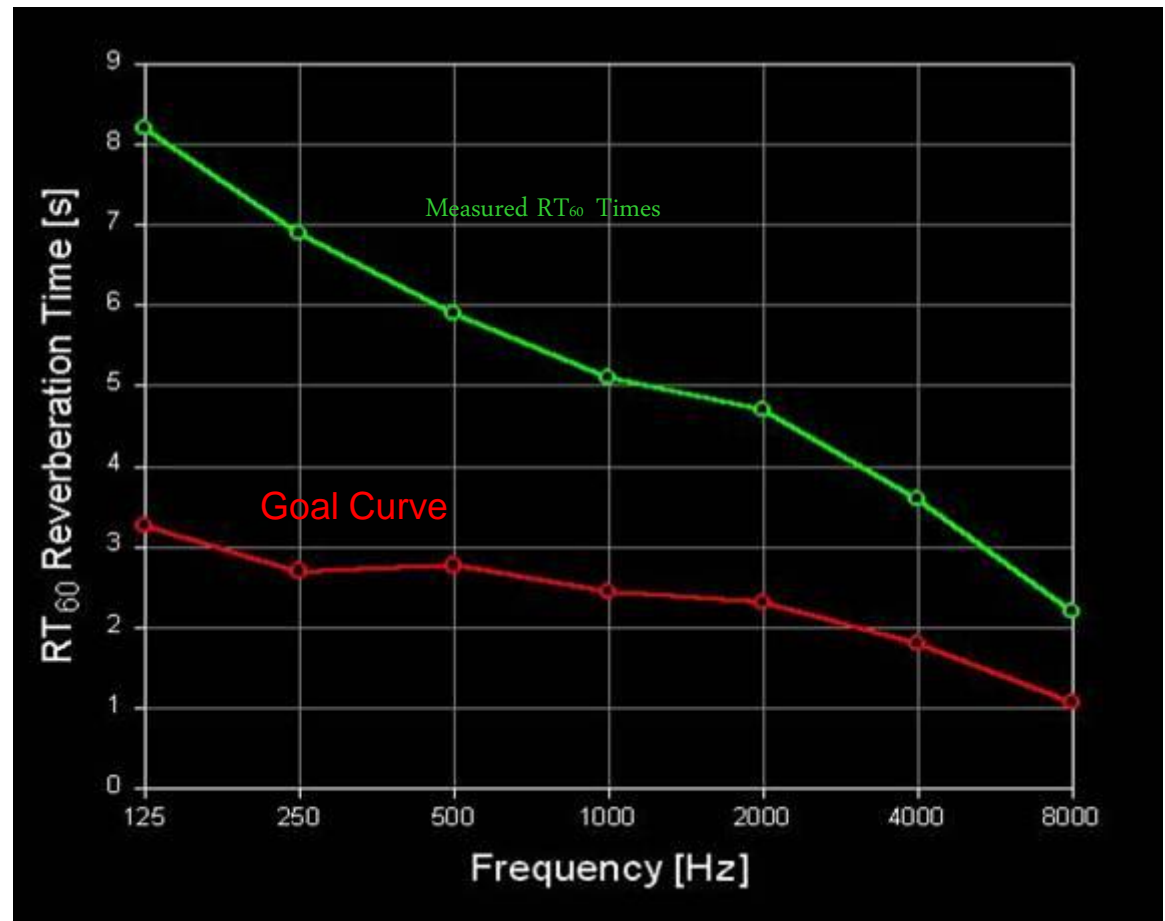
Modified State

Male Voice 0:30

Comparison of various sound
reinforcement systems

Completely performed as virtual
prototyping (no physical
installation required!)

SYSTEM 1

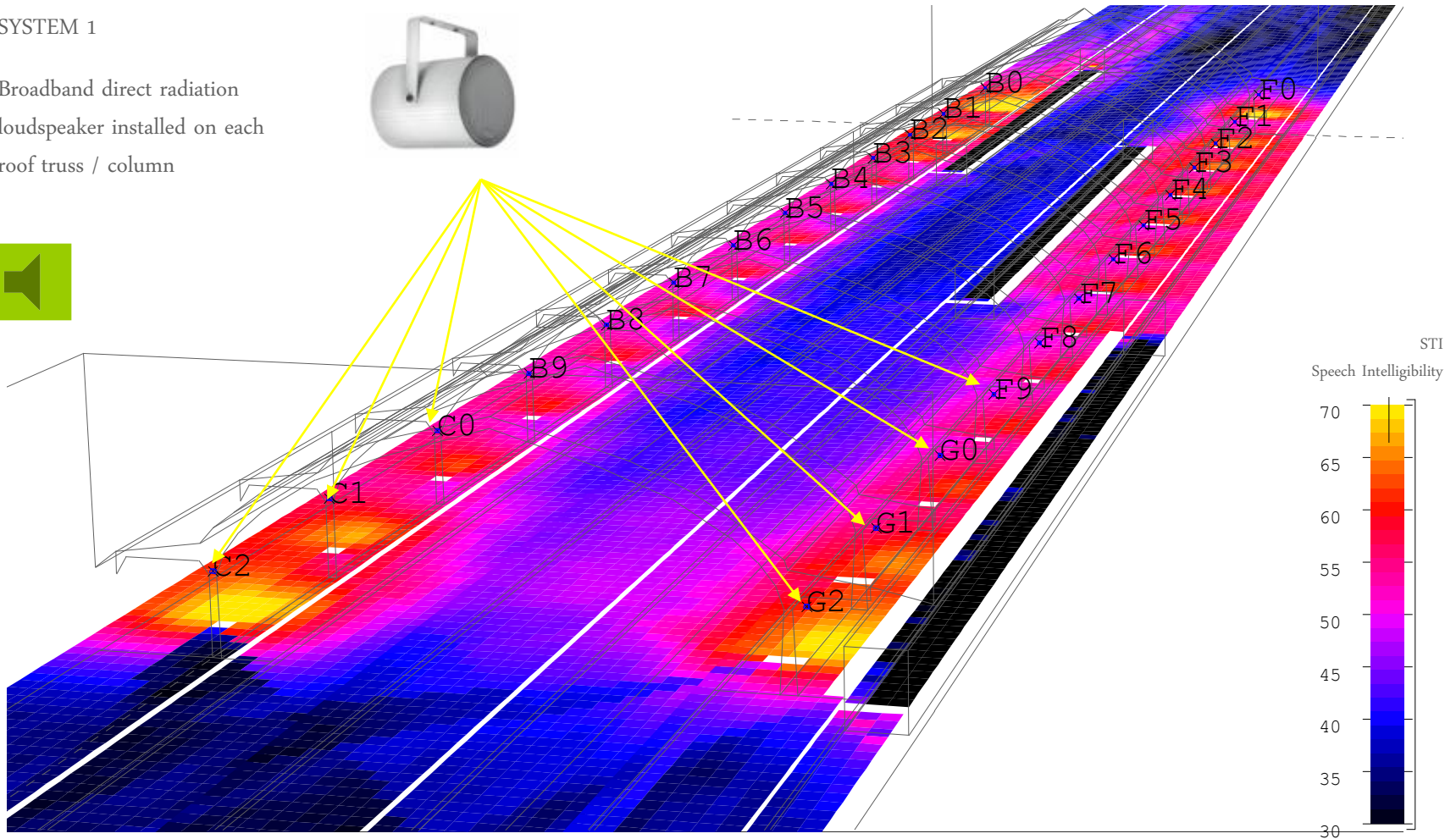Broadband direct radiation
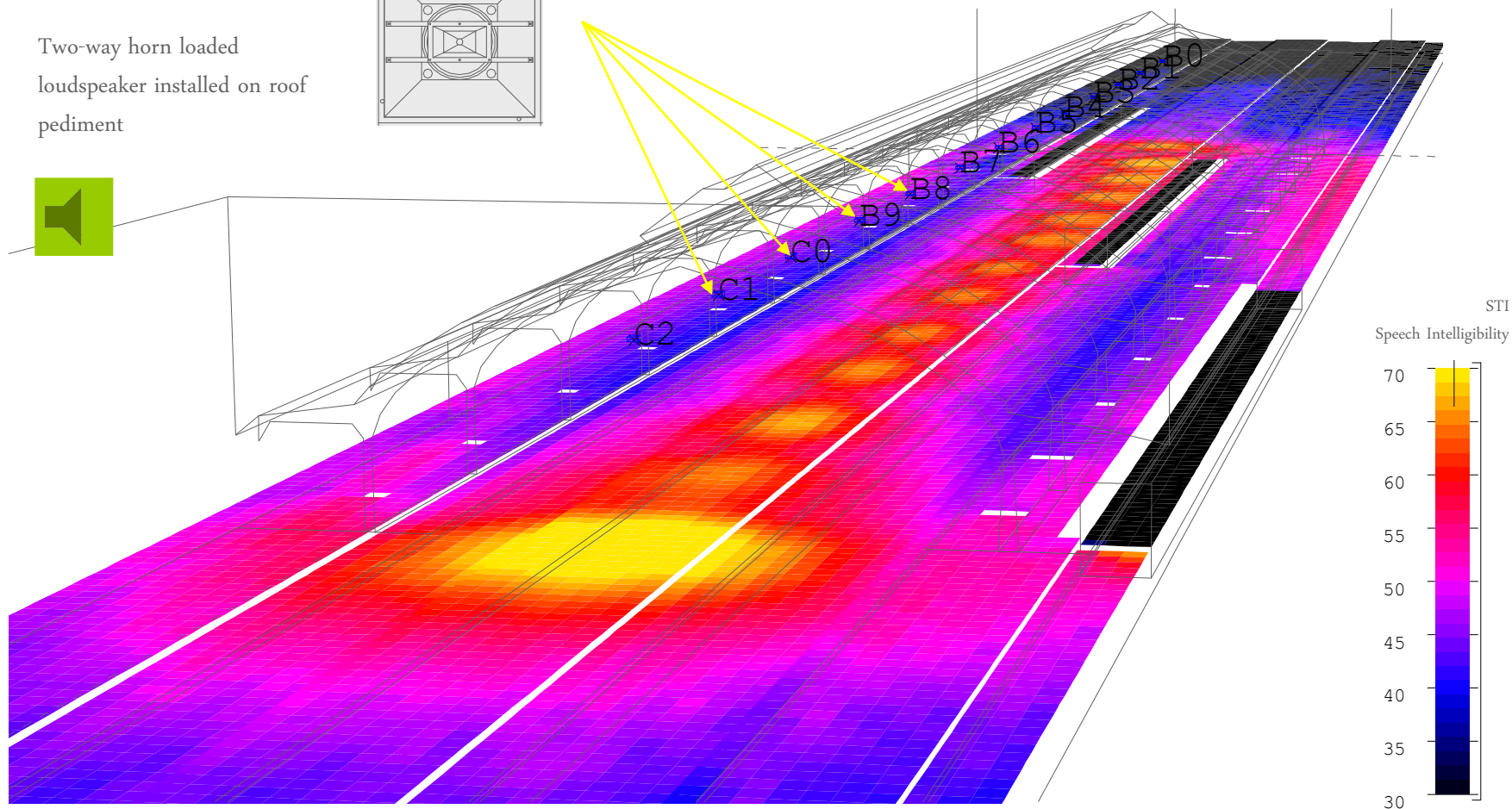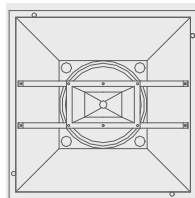loudspeaker installed on each
roof truss / column



STI
Speech Intelligibility

70
65
60
55
50
45
40
35
30

SYSTEM 2

Two-way horn loaded
loudspeaker installed on roof
pediment



STI
Speech Intelligibility

70
65
60
55
50
45
40
35
30

SYSTEM 3

Multi unit line array
loudspeaker (center cluster)
hung at two locations



STI

Speech Intelligibility

70

65

60

55

50

45

40

35

30

Recording Room – comparison of simulations with real world measurements

Recording Room – comparison
of simulations with real world
measurements
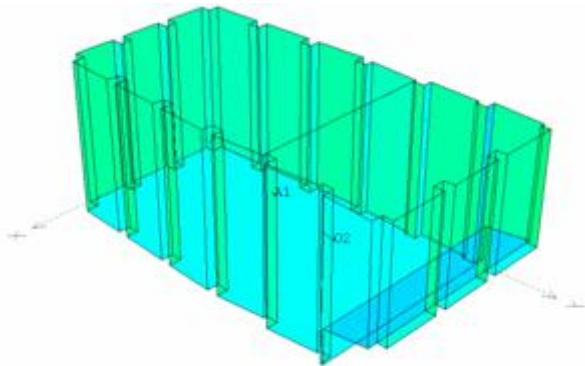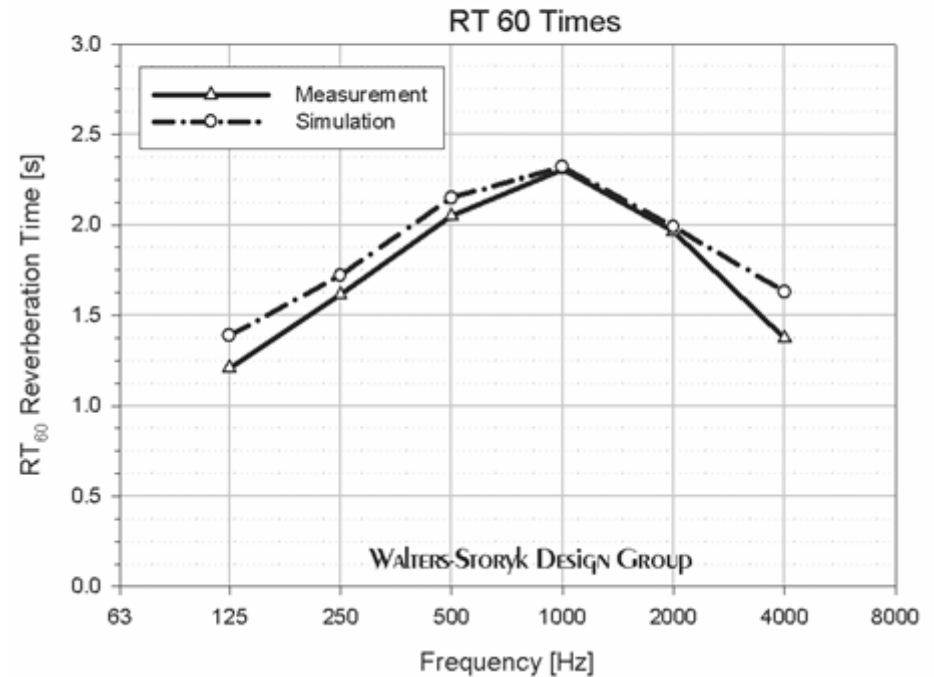

Recorded Audio File    0:20


Simulated Audio File    0:20

## CATT Simulations

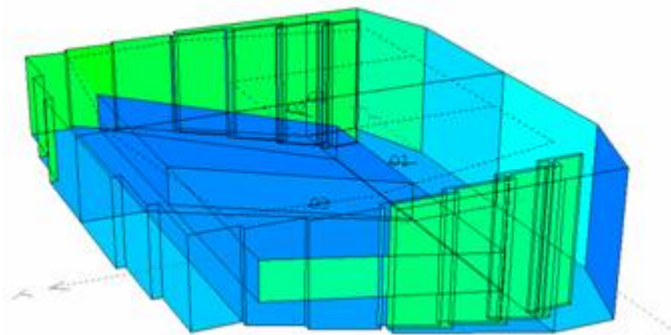Auditorium – comparison of simulations with real world measurements

Auditorium – comparison of
simulations with real world
measurements

Recorded Audio File    0:20

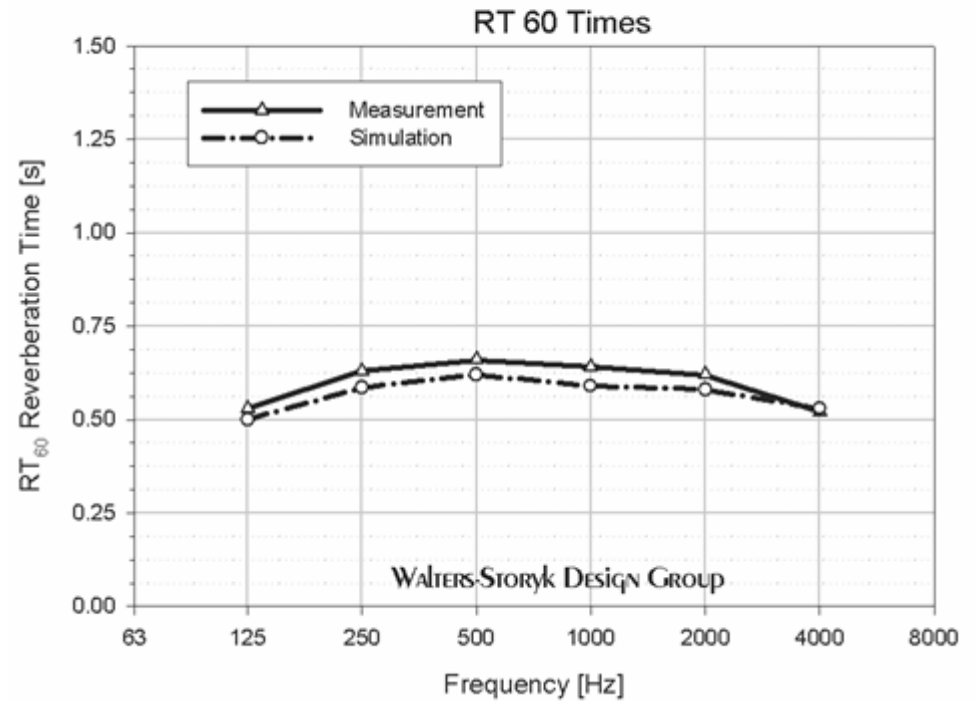Simulated Audio File    0:20

## CATT Simulations

### RT 60 Times

# ACOUSTICAL SIMULATION AND AURALIZATION

## SAMPLE PROJECT REVIEW

Credits:

Simulations by Gabriel Hauser Compilation by Dirk Noy