

Vibration Isolation of Buildings



Project name and site:

Kwai Tsing Theatre
Hongkong

Building:

900 seat theatre

Structure:

Reinforced concrete building

Noise and vibration source:

West Rail Freight Line

Base isolation spring system:

Fully-prestressable GERB-spring elements. System natural frequency: 3,5 Hz

Design load:

300,000 kN

Arrangement of spring elements:

On top of pile caps

Vibration isolation efficacy:

80 - 95%

Completion : 1999

Client:

Hongkong Government

Architects:

Architectural Services Department

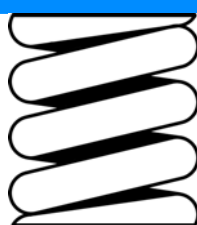
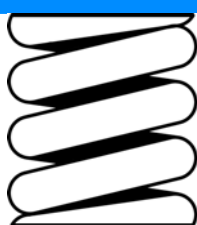
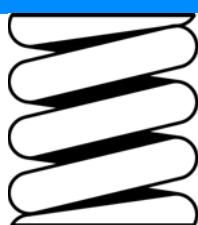
Civil, Structural & Services

Consultant:

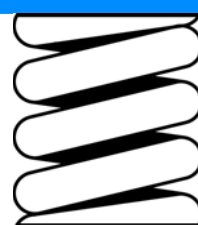
Ove Arup & Partners

Vibration & Acoustics:

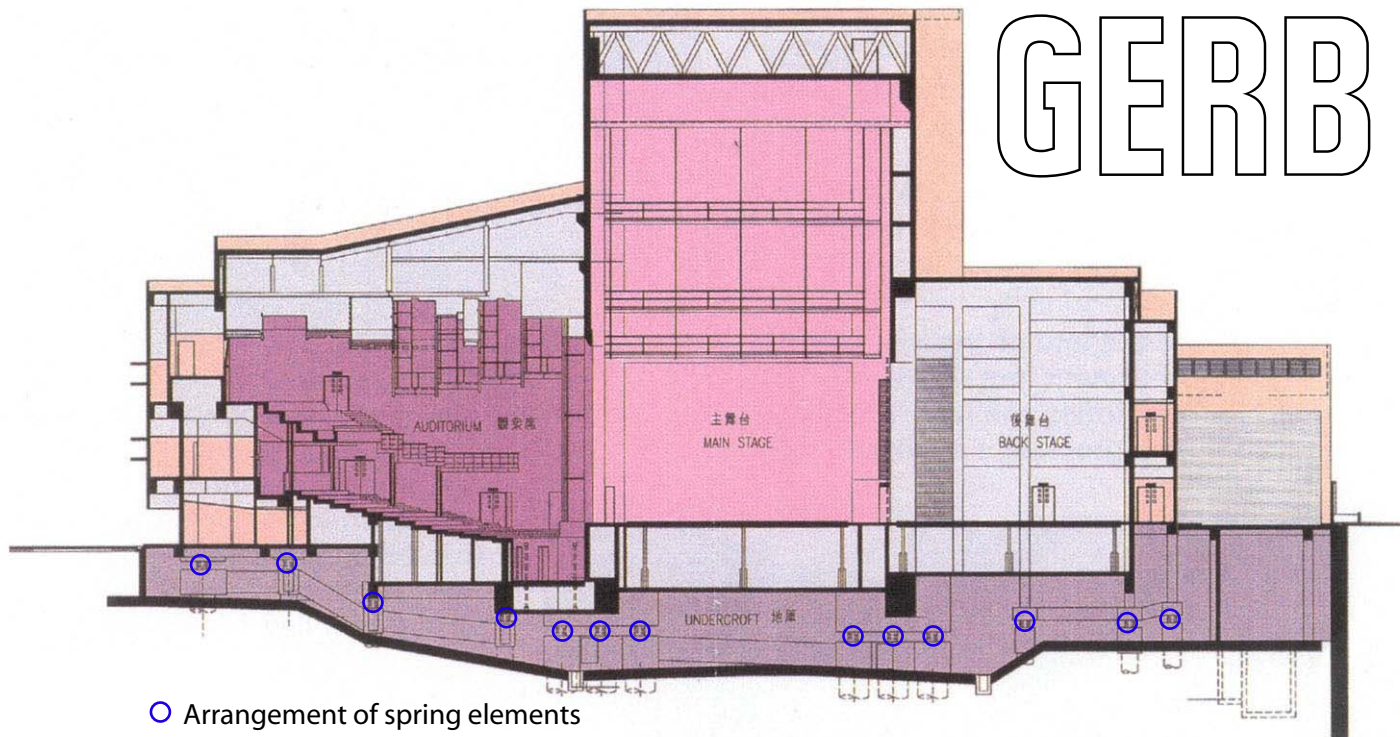
Arup Acoustics



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○ Arrangement of spring elements

Source : Asian Architect & Contractor



Spring system in operation



Spring elements placed on pile caps



Spring elements embedded in soffit formwork

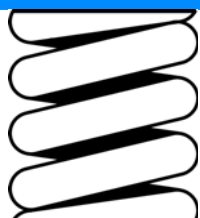
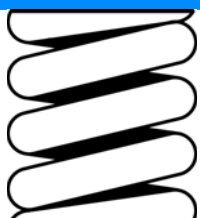
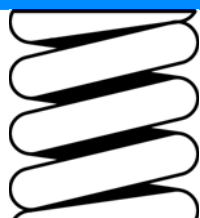
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DIN EN ISO 9001



Reference:
"Building Isolation"



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