

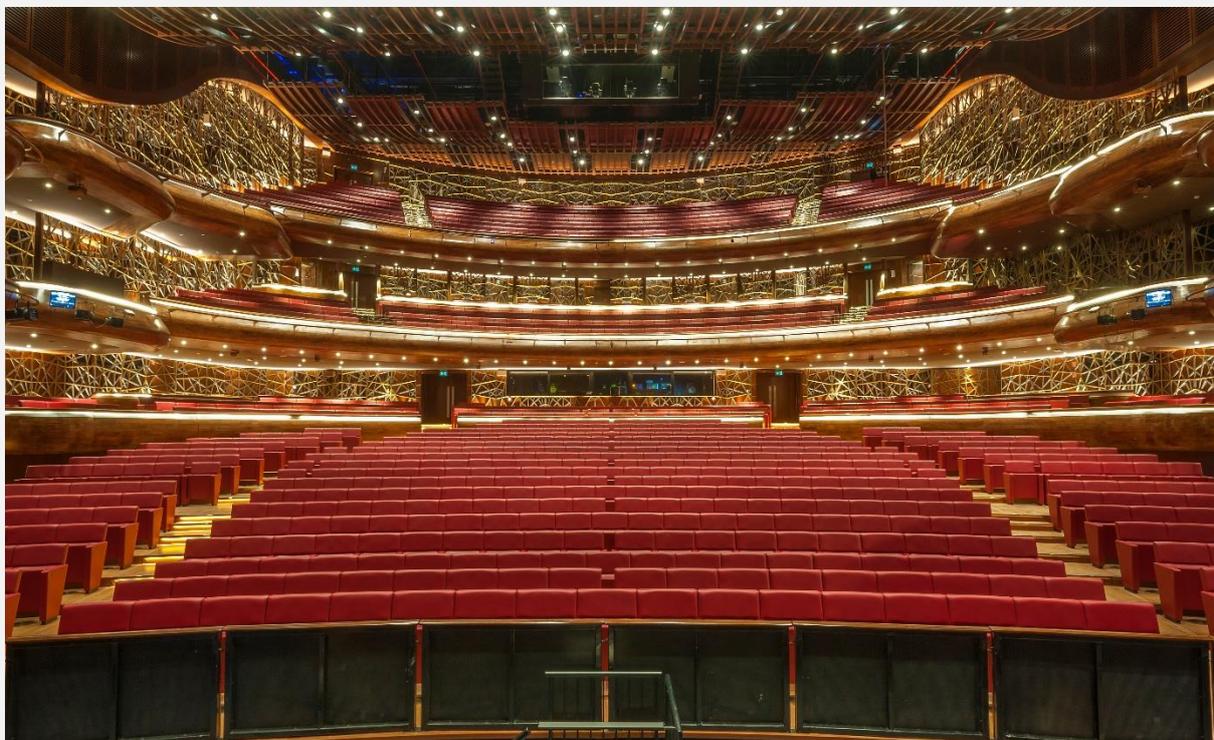
Dubai Opera

Complete	Area	Client	Architect
2016	Middle East	Mirage (via Theatre Projects)	Atkins (building) Arts Architecture (theatre interior)

Dubai Opera is an innovative privately funded performing arts centre which is set to become one of the most significant, vibrant and successful entertainment venues in in the Middle East.

The 2,000 seat, multi-purpose theatre features variable acoustics and layouts that make it a suitable space for opera, musicals, ballet and dance performances and drama productions as well as conferences and functions.

Movable risers are used to change the stalls floor from raked seating to flat floor and rotating side balconies are used to change the shape of the auditorium between theatre and concert modes. An acoustic shell is used to close off the fly tower and form an orchestral stage for concert mode. The design uses reflectors along walls and overhead to enhance the natural acoustics of the venue and shallow balcony overhangs to ensure all parts of the audience are acoustically immersed in performances.



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Services provided

Sandy Brown provided complete acoustic design services for the project from concept to completion. Key considerations included:

- room acoustics and finishes, including advice on reverberation times, control of early reflections and treatments required
- internal sound insulation, including airborne and impact sound insulation of floors and airborne sound insulation of partitions and doors
- acoustic performance of the building envelope, including noise ingress and egress, flanking sound transmission and self noise
- theatre equipment noise control
- building services noise and vibration control.

Special acoustic features

Particular intricacies of the design included ensuring acoustic quality to the auditorium given the variable layouts and diverse proposed usage. The auditorium is formed as an inner box using masonry and concrete constructions to maximise low frequency sound insulation and minimise low frequency absorption from resonance of lightweight panels. This was combined with open truss steelwork to support the roof which has the acoustic advantage of ensuring sound in the upper part of the auditorium can freely transfer from the front to the rear of the space.

The transformation of the space from the theatre to concert mode removes the majority of the stage area from the acoustic volume of the auditorium by use of an orchestra shell. High level inflatable baffles are used in theatre mode to provide additional low frequency absorption along with variable banners and drapes.

Detailed computer modelling of finishes and sound reflections in the auditorium was undertaken to refine the design and specify appropriate acoustic finishes.



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