



TOKAJI AMPHITHEATRE



TOKAJ, HUNGARY
EUROPE/MIDDLE EAST/AFRICA





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Set against the backdrop of the Tokaj Mountains, in a region of Hungary known for its wine and green countryside is the Tokaji Amphitheatre. Located just outside the city of Tokaj, the open-air arena was built in the area known as 'Patkó Bánya' - the horse shoe pit - originally a stone quarry that sat unused for decades. During the '90s the space began to be used for the occasional festival and other events and it was through this that István Dévald, Director of the Tokaji Amphitheatre saw the spaces' potential. Taking inspiration from the Römersteinbruch Arena in St. Margarethen, Austria, István envisioned making the quarry a fully functioning open-air theatre. Tamas Fazekas, CEO of ZAJ Show Lighting, helped István by designing the audio and lighting set-up in every aspect for the space. The main brief for the audio system was it had to reach an audience of 2,500 people comfortably. Tamas said: "The geography was a key factor in the process. The quarry wall is 30 metres high and the Tokaj Mountain, which sits next to the arena, rises above another

400 metres. Not to mention the heavy winds that come down from the Hungarian Plain, which make for some strange meteorological conditions. The stage is under the mountain wall so the orientation of the sound system was going to be in the direction of the wind. We had to have a system we could over scale, whilst still being able to output a variety of audio styles."

Tamas decided to design the audio system with high variability that could handle prose, musical, and live concert events without having to be monitored or under a roof. Furthermore, the system had to be mobile for use in small events in the city and durable against the elements.

Tamas selected a number of Outline products for this highly varied project. The main goal was to have smooth coverage across the whole 2,500-seat auditorium. The main PA comprises 16 Outline Butterfly C.D.H 483 high-pack line arrays, which can be used in conjunction with four Outline Mantas line arrays, that have the





TECHNICAL INFORMATION

AUDIO

16 x Outline Butterfly C.D.H 483 high pack line array cabinet; 16 x Outline DBS 18-2 subwoofer; 12 x Outline Mantas line array cabinet; 8 x Outline T7 two channel amplifier; 8 x Outline T11 power amplifier; 6 x Outline T5 DSP amplifier; 2 x Roland M-480 mixing console; 1 x Roland M-200i mixing console; 1 x Sennheiser EW IEM wireless monitoring system

ACADEMY3

32 x DTS Nick NRG 1201 moving head projector; 36 x Selecon PL1 LED fresnel; 24 x Selecon PL1 LED luminaire; 16 x SGM SixPack LED pixel binder; 8 x SGM Q-7 flood blind strobe; 18 x PR Lighting ARC LED 3108 high powered LED reflector; 48 x Wave-Lighting 180W LED-PAR; 24 x SLD Grappa-3 LED fixture; 1 x Jands Vista L5 lighting & media console; 1 x Jands Vista T2 console; 1 x Nicolaudie Sunlite STICK-DE3 lighting controller

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option of being hung from the roof or on separate array towers. The front fills can be placed under the arrays or on the apron of the stage. The 12 Outline DBS 18-2 subwoofers can be situated on two sides; under the arrays with the option of being cardioid or placed in front of the stage. The apron of the stage is a one metre-high arched solid structure, after testing several sub configurations ZAJ found the wide line subwoofer configuration to be the most effective. It provided the best coverage for all the seats in the 60 metres deep

auditorium. Eight Outline T7 two-channel amplifiers, six Outline T11 amplifiers and two Outline T5 DPS amplifiers power the main PA system. The amplifiers are equipped with DSP and Ethernet cards so they can be quickly and easily tuned to any variation. They can be fed by AES signals but Tamas decided to configure the analogue inputs as a backup, so they can be used with any smaller mixing consoles without needing to be reconfigured.

For the side fills a further eight Outline Mantas line arrays are





supplemented by four Outline DBS 18-2 subwoofers and powered by four Outline T5 DPS amplifiers and two Outline T11 amplifiers.

"We have designed a very strong side-fill system, on a truss width of 24 metres, which can be used for theatrical productions without the use of wedges. It can also be used with the main PA system for a more precise coverage or as a separate system," explained Tamas.

"We chose Outline products because of the variability and sound quality. When we modelled the predicted behaviour of the system we achieved our goal - a maximum 6dB difference on a minimum of 95% of the auditorium. This meant that the seats on the front row shared the same sound experience as the seats on the last row. So regardless of where you sat the music will sound the same."

Tamas continued: "During the opening ceremonies of the amphitheatre we went for a classic two arrays hung from the roof with a wide arced line subwoofer configuration and placed the front fills on the subwoofers. The second event was a piano show that was supported by a philharmonic orchestra and a choir. During this performance there was over 140 people on stage and we were able to use the same setup. It has worked well for other music genres too." For mixing requirements in the amphitheatre two Roland M-480 mixers and a Roland M-200i mixing system were selected. A Sennheiser EW 300 IEM wireless monitoring system was installed for control of the wireless microphones.

For the lighting at Tokaji, Tamas and his team had to consider the environmental conditions of the venue, keeping the focus of the lighting on the stage whilst still providing enough light for the guests to see their surroundings.

Tamas selected a complete LED based stage lighting system, with products from Selecon and SGM, but also included SLD Grappas manufactured by ZAJ Group and Lycian followspots. Mounted on the truss above the main stage are 32 DTS Nick NRG 1201 moving head projectors, 36 Selecon PL1 LED fresnels, 24 Selecon PL1 LED luminaires and 48 Wave-Lighting 180W LED-PAR fixtures. While 24 SLD Grappa-3 LED and eight SGM Q-7 flood blind strobes are situated in towers either side of the auditorium pointing towards the stage. The complete system is controlled by a Jands Vista L5 lighting and media console featuring a large HD pen-tablet screen and graphically based user interface, for quick and simple operation. As a backup a Jands Vista T2 console supplements the desk.

In the venue's stonewalls and surrounding areas ZAJ fitted 18 PR Lighting ARC LED 3108 high powered LED reflectors and 16 SGM SixPack LED pixel binders to create an atmospheric and a colourful background for the stage and arena. The spectator area and stonewall lighting is controlled by a Nicolaudie Sunlite STICK-DE3 lighting controller.

In such a naturally beautiful and unique location it isn't hard to see why the Tokaji Amphitheatre is appealing place to visit, and with the audio and lighting designed for all genres of music - from opera, classical, pop and even techno it can cater for all tastes. 🎵

FRANÇAIS

Les montagnes de Tokaj sont en toile de fond de l'amphithéâtre de Tokaj. Située en périphérie de la ville de Tokaj, l'arène en plein air fut construite dans la zone de « Patkó Bánya » ou le « trou en forme de fer à cheval », qui était une carrière de pierre inutilisée depuis des décennies. En s'inspirant de l'arène de Römersteinbruch en Autriche, István Dévald, le directeur de l'amphithéâtre de Tokaj, imagina de transformer la carrière en un véritable théâtre. István reçut l'aide de l'entreprise ZAJ Show Lighting qui conçut et créa les technologies audio et d'éclairage sous tous leurs aspects. Le principal système de sonorisation, 16 modules de haut-parleurs à haut rendement Butterfly C.D.H 483 conçu par Outline ont été choisis et peuvent être utilisés simultanément avec quatre line-array Mantas du même fabricant, et sont soit suspendus du toit ou utilisés en colonnes d'enceintes verticales. Les 12 caissons de basse DBS 18-2 de chez Outline peuvent être placés des deux côtés, sous les colonnes d'enceintes en configuration cardioïde ou devant la scène. Huit amplificateurs bicanal T7 de chez Outline, six amplificateurs T11 et deux amplificateurs T5 DPS aussi du même fabricant alimentent le principal système de son. Pour les appoints, huit autres enceintes compactes Mantas de chez Outline sont alimentées par quatre caissons d'extrêmes graves, DBS 18-2, quatre amplificateurs T5 DPS et deux amplificateurs T11 tous de chez Outline. Le choix des consoles de mixage de l'amphithéâtre se posa sur deux tables de mixage M-480 et un système de mixage M-200i, toutes deux de chez Roland. Un système de gestion sans fil EW 300 IEMa de Sennheiser fut installé pour contrôler les microphones. Les appareils d'éclairage choisis par Tamas comprennent un système d'éclairage de scène LED avec des produits de chez Philips-Selecon et SGM, avec également des luminaires SLD Grappas créés par ZAJ et des poursuites de chez Lycian Stage Lighting.

DEUTSCH

Vor der Kulisse der Tokajer Berge liegt das Tokaj-Amphitheater. Die Openair-Arena direkt vor der Stadt Tokaj wurde in der unter dem Namen 'Patkó Bánya' - die Hufeisengrube - bekannten Zone erbaut und war ursprünglich ein Steinbruch, der Jahrzehnte lang nicht mehr in Betrieb war. István Dévald, der Direktor des Tokaj-Amphitheaters, liess sich durch die Römersteinbruch-Arena in Österreich inspirieren und wollte aus dem Steinbruch ein richtiges Openair-Theater machen. ZAJ Show Lighting unterstützte István bei der Konzeption und Schaffung der Audio- und Beleuchtungstechnologie in jedem Aspekt für den Raum. Im Haupt-PA-System wurden 16 Outline Butterfly C.D.H 483 High-Pack-Line-Arrays ausgewählt, die zusammen mit vier Outline Mantas Line-Arrays benutzt werden können, die über die Option verfügen, vom Dach oder von einem separaten Array-Turm hängen zu können. Die 12 Outline DBS 18-2 Subwoofers können an zwei Seiten platziert werden; unter den Arrays mit der Option Kardioide oder vor der Bühne. Acht zweikanalige Outline T7 Verstärker, sechs Outline T11 Verstärker und zwei Outline T5 DPS Verstärker versorgen das Haupt-PA-System. Für die Seitenfüllungen werden weitere acht Outline Mantas Line-Arrays über vier Outline DBS 18-2-Subwoofer, vier Outline T5 DPS-Verstärker und zwei Outline T11-Verstärker versorgt. Für die Mischpulte im Amphitheater wurden zwei Roland M-480 Mixer und ein Roland M-200i Mixingsystem ausgewählt. Ein kabelloses Sennheiser EW 300 IEM Überwachungssystem wurde für die Kontrolle der kabellosen Mikrofone installiert. Für die Beleuchtungskörper hat Tamas ein komplettes LED-basiertes Bühnenbeleuchtungssystem ausgewählt, das von Philips-Selecon und SGM aus produziert, aber auch SLD Grappas von ZAJ und Lycian Followspots enthält.

ITALIANO

Con alle spalle i monti Tokaj, troviamo l'anfiteatro Tokaj che è posizionato appena fuori dalla città di Tokaj. Questa arena all'aperto è stata costruita nell'area meglio conosciuta come "Patkó-Bánya" (la fossa a ferro vi cavallo), originariamente una cava di pietra che era rimasta inutilizzata per anni. Prendendo ispirazione dalla Römersteinbruch Arena (in Austria), il direttore dell'anfiteatro Tokaj, István Dévald, ha avuto un'ispirazione tanto da rendere la cava di pietra un vero e proprio teatro all'aria aperta. ZAJ Show Lighting ha aiutato István nel progettare e creare, per lo spazio, la tecnologia audio-luci nel minimo dettaglio. Nel sistema PA principale sono stati scelti i line array Outline Butterfly C.D.H. 483 high-pack, i quali possono essere utilizzati in combinazione con quattro line array Outline Mantas che possono essere appesi dal soffitto oppure da torri per array separate. I 12 Outline subwoofer DBS 18-2 possono essere posizionati su due parti: o sotto gli array fungendo da cardioidi, oppure posizionati di fronte al palco. Il principale sistema PA utilizza otto amplificatori Outline T7 a due canali, sei amplificatori Outline T11 e due amplificatori Outline T5 DPS. Per i lati troviamo altri otto line array Outline Mantas che sono potenziati da quattro subwoofer Outline DBS 18-2, quattro amplificatori Outline DPS T5 e due amplificatori Outline T11. Per quanto riguarda le console, per l'anfiteatro sono stati scelti due mixer Roland M-480 ed un sistema di mixaggio Roland M-200i. Per quanto riguarda il controllo dei microfoni senza fili, è stato installato un sistema wireless di monitoraggio Sennheiser EW 300 IEM. Per il sistema luci, invece, Tamas ha scelto un sistema di illuminazione del palco completamente a LED, con prodotti della Philips-Selecon e SGM, come anche SLD Grappas della ZAJ e fondografi Lycian.

ESPAÑOL

Emplazado contra el fondo de las Montañas Tokaj se encuentra el anfiteatro Tokaj. Ubicado justo a las afueras de la ciudad de Tokaj, el teatro al aire libre fue construido en la zona conocida como Patkó Bánya - la pista para lanzar herraduras - originalmente una cantera de piedra que estuvo sin utilizarse durante décadas. Inspirándose en el Römersteinbruch Arena en Austria, István Dévald, Director del anfiteatro Tokaj, concibió hacer de la cantera un teatro real al aire libre. ZAJ Show Lighting colaboró con István diseñando y creando la tecnología de audio e iluminación en todos los aspectos para el espacio. En el sistema PA original se eligieron 16 líneas de formación acústica Outline Butterfly C.D.H 483, las cuales se pueden utilizar junto con las cuatro líneas acústicas Outline Mantas, que tienen la opción de colgarse del techo o de colocarse en torres acústicas separadas. Los 12 sub-woofers Outline DBS 18-2 pueden situarse en dos lados; debajo de las líneas acústicas con la opción de ser cardioide o ubicarlos en frente del escenario. El sistema PA principal es alimentado por ocho Outline T7, dos amplificadores de canales, seis amplificadores Outline T11 y dos amplificadores Outline T5 DPS. Otras ocho líneas acústicas Outline Mantas son alimentadas por cuatro subwoofers Outline DBS 18-2, cuatro amplificadores Outline T5 DPS y dos amplificadores Outline T11 para los rellenos de los laterales. En cuanto a las consolas para mezcla en el anfiteatro se seleccionaron dos mezcladores Roland M-480 y un sistema para mezcla Roland M-200i. Se instaló un sistema de monitoreo inalámbrico Sennheiser EW 300 IEM para controlar los micrófonos inalámbricos. Para los artefactos de iluminación, Tamas eligió un sistema completo de iluminación para el escenario a base de LED con productos de Philips-Selecon y SGM, pero también incluyó SLD Grappas creadas por ZAJ y seguidores Lycian.