Superlative Convention and Event Centre in Tashkent

With a floor space of about 40,000 sqm and the overall budget of a medium-sized airport, the International Forums Palace Uzbekistan was probably one of the most remarkable building projects of 2009.

Planning and construction of the complex was completed in just six months. The SALZBRENNER STAGETEC AVM systems house was responsible for all the AV and media systems — a unique challenge in this most modern events complex in Central Asia.

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Tashkent, the capital of Uzbekistan, is the location where the International Forums Palace Uzbekistan, was built last year. A mixture of buildings resembling a palace for state occasions and conferences, a high-tech convention centre and an 1,850-seat theatre, such a combination is probably unique in the world. For the extraordinary architecture, the lavish interior and the top quality technical installations, the Uzbek government relied mostly on German businesses.

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Since the autumn of 2009, the Central-Asian metropolis has had a new landmark: The Forum Palace located at the Amir Timur Square. Constructed of snow-white Thassos marble covering an area of 80×100 meters and with a dome that is almost 50 meters high, it can hardly be overlooked.

When furnishing the interior, the architects were able to draw on abundant resources. Only the most exquisite materials were used. The property developers extended this ambitious approach to the technical equipment. The large hall with the dome has an overall height of 48 meters. It houses a stage measuring 25 meters in width and up to 20 meters in depth, a complex lighting system comprising, amongst other things, multicoloured LED ribbons and portals made of highly polished ebony.

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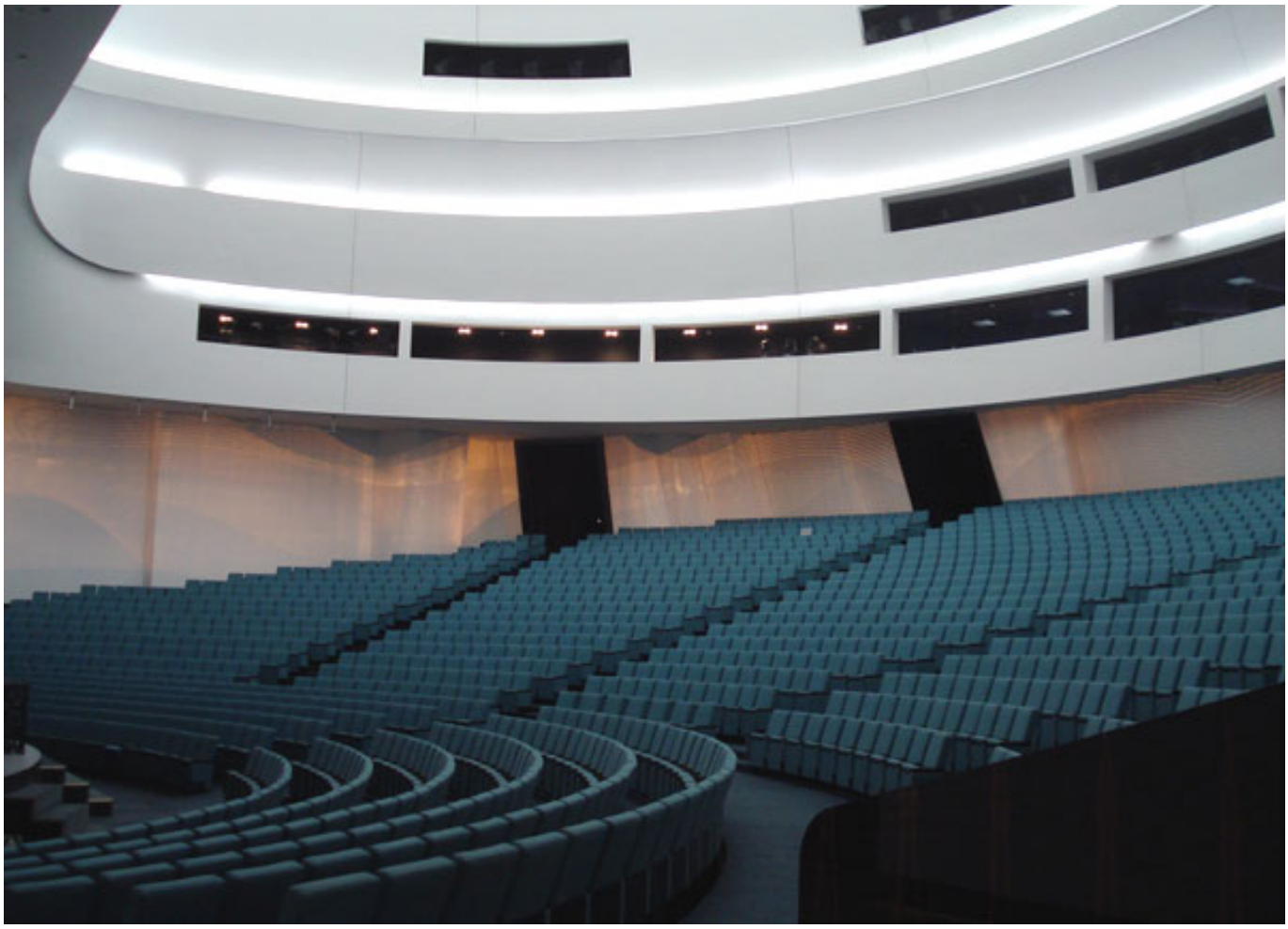

In addition to the large hall, the complex houses a conference room, a banqueting hall, a restaurant and extensive accommodation for Islom Karimov, Uzbekistan’s president since1990.

Cabling in Record Time

In June 2009, theapro, a Munich-based design company specializing in theatre technologies, made an initial enquiry to the SALZBRENNER STAGETEC Audio Video Mediensysteme GmbH systems house as well as STAGETEC Entwicklungsgesellschaft and the intercom experts from DELEC. It dealt with the planning and realization of the entire audio and video system for the Forum Palace in Tashkent. At this time, the construction work was already in full swing. It soon became apparent that this would be a large-scale project like no other, mainly because of the fixed completion date.

Just two weeks after the initial enquiry, SALZBRENNER STAGETEC AVM was contracted and the first staff members arrived on site a few days later. Markus Schirmer became the project manager responsible for the Tashkent project. He remembers: “Our greatest challenge was getting qualified personnel to the construction site in the shortest possible time and providing them with the

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necessary material immediately. In particular, only a very short time was available to complete the cabling works of this extensive project. Later, the progress of the construction works would make cabling very difficult, if not impossible. Therefore, we had run the first cables in the building only three weeks after the project had started.” Many other components were subject to substantial procurement problems due to the normal delivery lead times from the respective suppliers. For example, acquiring 300 ceiling speakers of a specific type within a very short time in order to install them at Tashkent only a few days later is definitely not a simple task. A big advantage to the contractors was the fact that the entire materials transport from Germany to the construction site was organised superbly by the property developers.

Audio System

The audio system in the complex is so adaptable that high-quality sound reinforcement can be provided almost anywhere. There are more than 120 junction boxes inside the building, which offer enormous flexibility in combination with the NEXUS audio network and extensive additional analogue wiring.

A STAGETEC CRESCENDO digital console with 56 faders, located in the large hall control room, and a NEXUS STAR router lie at the heart of the audio system. The console control surface can also be deployed in other locations in the house by connecting it to the STAR router via the optical cabling installed throughout the building. For example this enables the console to be used in the body of the hall . The audio-specific project requirements placed particular emphasis on equipment

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that can be installed and operated quickly and safely without complex training. The CRESCENDO was chosen deliberately, because it not only provides the flexibility typical of digital desks, but also user-friendly setup options. With its 56 faders, the console also offers a dedicated channel strip for each input source in all imaginable scenarios in Tashkent, so multiple layers will rarely be used – this is beneficial to intuitive operation. The console is used in combination with peripherals installed into two racks: various players and FX processors plus a NEXUS Base Device for connecting the console.

Apart from the STAR router, the NEXUS network comprises 10 Base Devices of different sizes and configurations placed in strategic positions around the building. Next, there is extensive analogue cabling, for example, to the numerous junction boxes. Analogue lines are even run to the two amplifier rooms that feed the hall speakers; however, these are for backup and will only be used if the digital main connection should fail. The large Base Device in the control room features numerous analogue audio ports enabling any analogue channels to be connected to the digital router. This is useful, for example, for servicing locations inside the building that are not in close proximity to a Base Device, or to have a fallback solution at hand, in case of failure, that can be used by untrained operators.

Three Base Devices are used as mobile stage boxes and serve for connecting microphones and for monitoring purposes. Each of these units features 24 microphone inputs and 8 line outputs. They can be connected to any of the six junction boxes in the stage area using rugged optical fibre and robust Neutrik connectors. Alternatively, the stage boxes can be located in the auditorium or in any of the other halls. In addition, two racks with Sennheiser wireless systems are available in the hall. Each system supports 8 receiver channels for microphone signals plus 4 transmitter channels for in-ear monitoring systems. In order to ensure reliable operation of the wireless systems and to select appropriate frequencies, the local frequency spectrum was first examined using sophisticated measurement equipment. However, the large hall is well shielded thanks to its palladium shell, so RF interference is unlikely to be a problem.

It was decided there would be a two pronged approach to sound reinforcement in the large hall. The main PA system consists of white-painted speaker systems, which can be hidden in the ceiling void, when not required, using special lifts. A secondary speaker system, used mainly for speech reproduction, remains invisible even when in use – it is concealed behind covered frames, flush-mounted elegantly into the ceiling structure. 12 additional speakers mounted on the edge of the stage are used as near-fills supplying the front rows.

The amplifiers for all systems are installed in two amplifier rooms. They are fed with digital audio over an AES/EBU multicore cable from a NEXUS Base Device located in the stage-management centre. All the amplifiers are remote controlled and monitored from the control room using laptops running a special remote control software application. In this setup, the computers and the amplifiers communicate over a CAN bus – appropriate TCP/IP converters make it possible to use the cable

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lengths required in this installation. The speakers in the other major halls in the building can be controlled in the same way.

In the conference and banqueting halls mobile audio racks housing players and compact third-party mixers are available. These racks not only provide for flexible independent sound reinforcement, but also connect to the NEXUS network using a MADI board in the mixer. For security reasons, the operator can block the audio-network connection from the conference hall to prevent eavesdropping.

The other parts of the complex – for example, the foyers and the restaurant – are catered for by around 400 wall and ceiling mounted speakers. In addition, high-performance column speakers with digitally controlled directivity, which can be reconfigured within seconds using presets, were installed in the foyer. Those

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speakers are routable independently, so individual delays can be applied. Public address intelligibility for announcements conforms to German standards – a key criterion in case of an emergency.

Another control room is to be built on one of the upper floors. This secondary control room will feature a Pro Tools system and will be connected to the NEXUS audio network. However, this studio, which will be suitable for live recordings, was not yet installed at the time of our visit.

Stage-Management System

A full-blown stage-management system forms part of the equipment in the main hall. This is networked to all production areas: dressing rooms, ballet areas, and rehearsal stages. Extra speakers were installed in these locations to relay the stage manager’s announcements as well as foldback signals from each of the three halls. Since the classic stage management system familiar from European venues is not really known in Uzbekistan, the system was pre-programmed to best meet the possible requirements of typical scenarios. The actual stage-management console is designed as a mobile standing-height desk. This special console version is lockable and can be removed from the stage when not in use.

For reasons of user-friendliness, a traditional relay system with emergency priority and a patch panel was installed for configuring individual call groups. This enables users without programming and computer skills to directly reassign a location to a different group. The ceiling speakers are normally fed by the NEXUS system; however, there is also a cross-connection to the stage-management system used for injecting alarm signals, interval bells, or pre-programmed announcements. Appropriate macros were configured on the NEXUS for this purpose.

Intercom

Naturally, the complex is also home to an ultra-modern intercom system. The heart of this digital system is a Delec oratis intercom matrix featuring 12 x 12 subscriber-unit ports, 20 x 20 four-wire ports, and 16 GPI/Os. It is located in the large hall control room. A centralized matrix for intercom offers inestimable benefits with a complex and time-sensitive installation such as this. All the necessary interconnections can be established flexibly using software, without having to take dedicated cable runs into account.

Another advantage in terms of flexibility is the fact that the Delec intercom system uses standard CAT network cabling, allowing cable runs of up to a kilometer. Besides the dedicated intercom cabling interconnecting all strategic locations, there is also an extensive network infrastructure within the building that can be used for data, audio, video, or intercom connections as required. If a specific location cannot be accessed using a dedicated intercom line, it can be easily connected using a special link between the intercom matrix and the network patch panel; any available CAT5 network cable will do for the purpose. And, since the Delec

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subscriber unit loads its custom configuration over the matrix port, new subscriber units can be positioned very flexibly.

Although all three halls intercom systems are physically connected to the central intercom matrix in the control room, they were configured to operate as autonomous islands for everyday work. Therefore, the subscriber units' auto-labelling keys only display local targets on the default layer. However, a second layer can be called to access every other target in the building, as necessary. For example, it is possible to address a target in the banqueting hall from the large hall. In this way, local users are not distracted unnecessarily by irrelevant targets and the risk of operating errors is significantly reduced, especially when multiple events are taking place in the various halls simultaneously.

In addition to the large Delec matrix-based intercom system, eight party line channels and four wireless channels were installed using RTS/Telex components. By default, the party line channels are also configured as local and are made accessible using junction boxes in numerous places inside the building. As well as talk functions the party line and wireless channels can be interconnected. The interconnection keys are made available on the main subscriber units to provide access, for example, for the stage manager. Such an interconnection can equally well be triggered directly from the belt pack of the party line system using a GPI. A mobile wireless intercom system in a flight case is available for special wireless applications – for example, a camera in the foyer, which is not physically connected to the hall. The intercom system also connects to the large NEXUS network over a four-wire line. This allows, for example the programme sound to be monitored on the subscriber units.

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