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Sound venue for classical strains

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THANKS to the generosity and foresight of Petronas, Kuala Lumpur finally has a wonderful concert hall.

The brand new Dewan Filharmonik Petronas, located between the Petronas Twin Towers, had its first acoustic testing not too long ago, for which the 109-member St Petersburg Orchestra conducted by Yuri Temirkanov performed for two nights.

It presented two different programmes to a select audience, graced by the presence of the Yang di-Pertuan Agong and the Raja Permaisuri Agong, the Prime Minister and his wife, and members of the diplomatic corps.

Both performances were an immense joy to listen to in acoustics that enhanced the instruments, allowing them to sound as they should.

Beautiful music was again heard, this time at the official opening of the hall with a gala performance by the Malaysian Philharmonic Orchestra (MPO) in conjunction with Petronas' second anniversary last Monday.

The glittery event was launched by Datuk Seri Dr Siti Hasmah Mohamed Ali. Also present was Prime Minister Datuk Seri Dr Mahathir Mohamad plus an 800-strong audience.

Under the masterful baton of MPO's music director Kees Bakels, the orchestra entertained its mainly distinguished audience with classics including Strauss' Don Juan Symphonic Poem.

The Dewan Filharmonik Petronas is a beautiful hall to look at and admire. It is the realisation of many people who worked over a period of four years in a concerted effort to realise Petronas' dream of an acoustically-perfect concert hall.

Acousticians Kirkegaard and Associates is "very happy with the hall", feeling that "there was a very important team effort" when they collaborated with the architects, Cesar Pelli and Associates, as well as the mechanical and structural engineers.

Lawrence Kirkegaard, who represented the acoustics company, explained that "the hall has been designed to accommodate a full symphony orchestra and eventually the pipe organ."

The basic concept therefore needed a fairly long reverberation time, longer for the organ than for the orchestra. Reverberation time is the duration of sound after the music stops and is more inbuilt into the piano but not into other instruments.

Reverberation time depends on how much absorption there is present as in seats, bodies, curtains, and also the space.

What one sees in the hall is not the whole volume of the room acoustically because beyond the ceiling above is a part that the audience doesn't see called the Reverberant Volume Room or "attic" which has a very heavy ceiling of 10cm of plaster, shaped to avoid echoes and is mechanically movable seven metres vertically in height.

In this way, the hall is "more reverberant with the ceiling raised and less reverberant when it is lowered".

When lowered the acoustics is perfect for chamber music or a chamber orchestra but "is a little live still for piano". To achieve a more articulate sound there are movable absorptive panels built into the hall's side walls which, when drawn out, would project "the clarity but still keep the fullness of the instrument".

The ceiling that the audience sees is transparent to sound because it is a very finely perforated, painted aluminium sheet of a millimetre

thickness. Its shape is purely architectural although "both the curved geometry of the main ceiling and the slightly domed geometry of the stage would have been a disaster acoustically if it were done in plaster".

The hall itself is a concrete structure resting on resilient pads made of neoprene, a synthetic rubber, which isolates the hall allowing it to be absolutely quiet regardless of the shopping mall just beside it and the hub of city noise.

Fully air-conditioned but superbly silent, it required great care to ensure that there was no noise from the operating machinery.

The teak wooden floor rests on top of a wooden structure on top of the concrete. The remaining wood in the hall - the walls, sides of the balconies and seats - is of nyatoh.

Everything within the hall, even the lines and curves of the side balconies, has been meticulously thought about and planned for the acoustics. Cleverly recessed into the side walls are wooden strips like fins, done in a very specific way so that they can be moved accordingly to "take the sound and spread it in widths" and not throw back echoes to the stage but at the same time "not absorbing sound so that you feel drawn into a black hole behind you as an audience".

Kirkegaard pointed out striking details like the wooden strips on the balconies, especially under the main booth, and the sculptured thick plaster that is "not flat either in its overall geometry nor in its surface".

This intentionally takes the sound from the stage and reflects it upwards and back to the seats that are under the balconies.

For those seated there, such is the acoustic perfection that "if one closes one's eyes, the edge of the balcony above 'disappears' as though it has been lifted away because the sound, instead of it being trapped under, becomes contributive".

The sculptured thick plaster on the underside of the balconies was carved by Pakistani craftsmen brought over specially to KL. The stage has a movable piano lift as well as a beautiful pipe organ by Klice. The risers upon the stage which seat the members of the orchestra in tiers has allowed for the ceiling to be very high in the room without suspended reflectors.

The stage can be extended or contracted by moving panels to allow for additional chorus risers. The microphones one sees are for recording, not for amplification.

For the acoustic tests there were three sets of mikes around the hall. For one of the tests on the first night of the concerts, an inflated balloon was burst on stage just before the performance began. A seated audience adds to the absorption so the 865 seats in the hall were designed "so that sound is not lost". Each comfortable cushioned seat sits on a solid chair and not on stretched fabric.

Kirkegaard does not consider the hall to be a small one because when one takes away the ceiling, the end concept is a "large room" that has the potential "to develop the fullness, the density of sound, the bass response which is rich and elegant" because of its construction.

The instruments sound as they should sound except that he would still prefer a "more silky quality" to the violins and higher pitched instruments. The work yet to be done is to put some thin fabric just underneath those vaults in the high ceiling "which would absorb a little but of the sharpness".

Nevertheless, it was a joy to listen to the wonderful concerts by the St Petersburg Orchestra whose illustrious conductor was jubilant in his praise for the new concert hall.

For both listener and performer, acoustics in a hall is of prime

importance for when the performer knows that the music from his instrument or voice will reach out naturally and fully he can give of his best and the listener too is then able to enjoy the fullness and quality of both the music as well as the talent behind the writing and the performing.

Thanks to the foresight of Petronas and the initiative of its chairman Tan Sri Azizah Zainal Abidin, it is petro-ringgit well spent and Kuala Lumpur has, at last, a beautiful acoustically-perfect concert hall.

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