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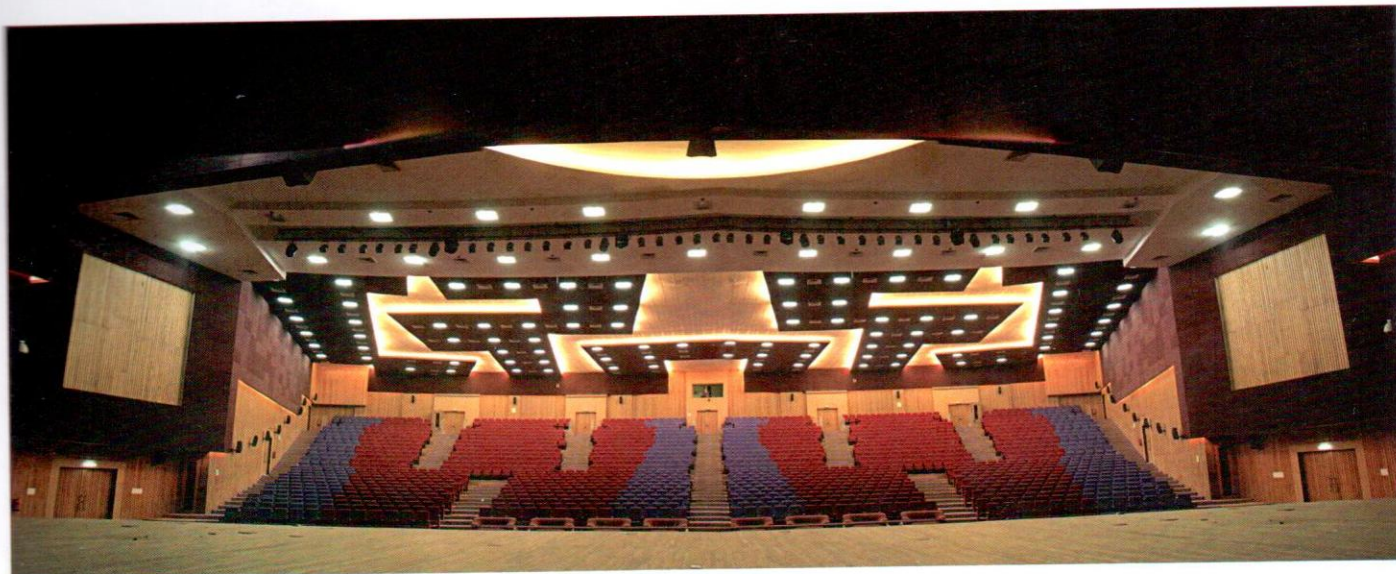


AV Science at the Choudhry Ranbir Singh Auditorium



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Choudhry Ranbir Singh Auditorium: Size does matter

AV Science at its expansive best in GJU - By Ram Bhavanashi

There have been large and expansive installs with exhaustive audio-visual integration fare, and there have also been some unique and innovative weaving of AV environments. The Choudhry Ranbir Singh Auditorium on the campus of Guru Jambheshwar University at Hisar, the 'Steel City' of North Indian State of Haryana, however, scores a different note altogether. Ambitiously expansive, uniquely scalable, and visibly awesome, the arguably grand, multipurpose edifice presents a multitude of structural and textural features integrated into an altogether different AV setting.

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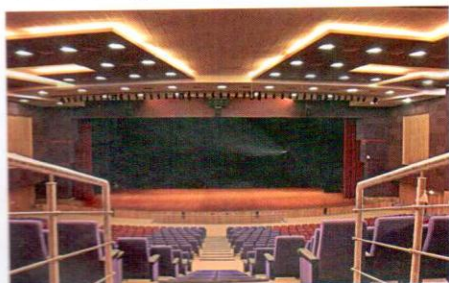
Roughly some 164 km, to the west of India's national capital New Delhi, lies the city called Hisar – in the North-Western State of Haryana – that was some time back identified to be a 'counter-magnet city' for the National

Capital Region for development of alternative centre of growth to New Delhi.

While the city has many a laurel to merit the distinction in terms of industrial and agricultural riches, what makes it now additionally notable is for the technological expanse that the locally-based Guru Jambheshwar University (GJU) of Science and Technology created in one of its three edifices that combine to make the Central Core of the campus. The Ch. Ranbir Singh Auditorium – named after late Choudhry Ranbir Singh, eminent statesman and Freedom-Fighter from the region – doesn't immediately look like a very ostentatious expression; but rather like a pleasant statement that harmonizes structure with nature. Created amidst sprawling 'green and eco-friendly' environment, the imposing building presents an amazing combine of size and scale in technology harnessing. While the building is generically named as 'auditorium,' it is practically much

more than that as it comprises many other aspects and facilities. Take a look:

- One large auditorium (called the Main Auditorium) with a whopping 1900 seat capacity
- One medium size seminar hall of 250 seat capacity
- Two small size seminar halls of 125 seat capacity each
- One video-conferencing room
- Central Control Room
- One large exhibition hall
- IT Security Surveillance
- Rehearsal Room for performance
- Greenrooms for men and women
- A large stage with wooden flooring and imposing lighting grid
- Cafeterias



In addition, the venue has an exclusive VIP Entrance and Lounge meant to receive and comfort visiting high-profile dignitaries.



VIP Lounge

Technologically said:

- The main auditorium; the three seminar halls, and the video-conferencing facilities are all integrated through an ingenious network and matrix that facilitates transmission of live AV feed from any of the four to the rest three
- The AV setting comprises both cinematic as well as presentation scenarios with a 2K DLP projection and 7.1 surround sound set-up for cinematic requirement, and IP-enabled multicasting HD camera system for presentation requirements
- The camera system is programmed to automatically focus onto the speaker either on the stage or in the audience
- The three Seminar Halls act as separate interactive classrooms as well as one single unit
- And, there are more...

"This project is, perhaps, the most unique, the only one of its kind in the country," explains Ashok Alhawat, the University's Superintending Engineer who had been instrumental in the project from concept to completion. "The coming of the facility is a realization of a long-sought dream. We wanted this not just to be the best of breed, but the rarest of the rare," he says adding, "we got a very prideful facility now."

For Jitender Singh, the Executive Engineer from the Technical Team that worked through the years to see the fruition of the project, the installation

has been challenging in many respects, and its realization meant a great deal of achievement. Combining so many features into one single large multipurpose facility, that too for an academic institution was rare. "We are happy that our University possess this, and we are part of it," says Singh.

"This is admittedly one of the most ambitious installs in the region, if not the country," explains Gopi Ram Malik, Director of Delhi-based systems integration leader AV Science Technologies Pvt Ltd. "Weaving in such a huge multitude of features and on such a scale is certainly rare in the country. More, an academic institution doing it is truly incredible," says Malik. "That is wholly due to the vision and dynamism of the University leadership- the Vice Chancellor, and the Registrar."

The concept:

When the GJU administration, roughly four years ago, decided to create an all-equipped, technologically futuristic multipurpose facility to host the institution's dynamically growing requirements well into the future, it apparently was only an ambition. There wasn't a well-defined vision. That said, when AV Science approached the GJU just as a vendor of AV equipment, it quickly realized there was so much to be

done. "We realized the need quickly and specified to them what they needed to do to have what they wanted- for each functionality," explains Malik. The GJU administration too quickly realized the need for a methodical and professional approach to its requirement, took AV Science onboard as the Consultant and Integrator for AV design and deployment.

That meant AV Science spent its time with the Works Department of the GJU to first draft the vision, and then spec for each of the deployment area. "Our job was primarily AV, communication, control, stage design and set-up, and lighting," Malik explains. "So, that's a real huge task."

According to the AV Science chief, the SI had suggested making the seminar halls interactive with streaming video provision; they had to be networked in such a way that proceedings on either side can be beamed live to the other facilities.

The AV deployment – the Main Auditorium:

The Main Auditorium is the face of the whole AV deployment at the GJU. Expansive by any scale, the large hall measures 33 meters at its narrowest and 49 meters at its widest width,



Main control room



125 Seater Seminar Hall

while stretching 40 meters in length, and scaling 21 meters high- making it perhaps the largest in the country.

In order to provide holding strengths to such a large facility, the roof of the building has been constructed with Multi-Rib 0.5mm thick colour coated galvalume sheet fixed over structural steel trusses spaced at 4 meters centre to centre, supported by central MS girder of about 42 meters in length and about 40 metric tons of weight. With a view to ensuring ideal acoustic environment, the walls and ceiling have been treated with calcium silicate boards and steam beach wood. The wooden stage measuring 40 x 21 meters is treated to rest over resistoflex neoprene pads to render the wooden floor the necessary cushion effect. The back wall on the stage hosts a huge projection screen cyclorama measuring 19m x 9m, and mounted on a steel frame.

Aided by EASE-powered sound testing and simulations, the auditorium was spec'd for 85-90dB. The audio deployment essentially comprised a 7.1 configuration to meet cinematic setting which meant install of a total of 28 numbers of Surround speakers wall-mounted all around, in addition to four

Subs hung from the ceiling in front of the stage, flanked by four monitors.

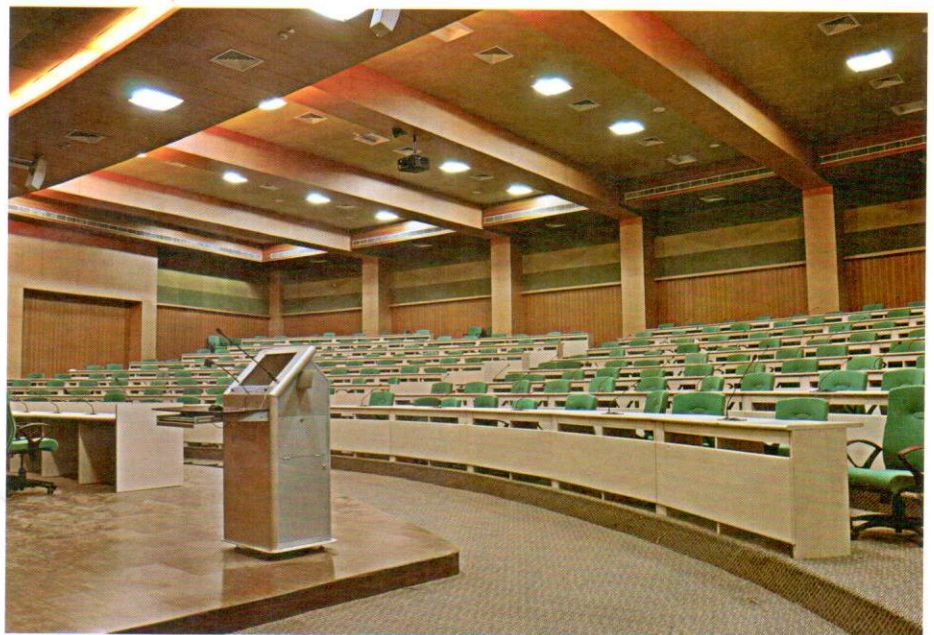
The video component in the auditorium features a Christie Roadie HD+30K (1080 HD 30,000 Lumens) projector fitted in the Control room at the rear and (first floor). The reason for choosing such a high power, and high-end projector was due to the requirement of throwing the images onto a screen that

measures over 50 feet diagonal. With a view to efficiently capturing the video proceedings from across the hall, the SI had incorporated two IP-enabled HD cameras with multicasting capability and broadcast quality- one meant for the audiences, and one focused on the stage meant to capture the stage activity.

For delivering the functions of switching between different modes of live feeds, the SI had incorporated a 12x8 Extron matrix switcher within the UTP backbone, to act as the centre of the network. "This is to channelize which projector from which hall should take what feed, or which camera has to pick up from where... etc.," explains Malik. "We also installed a Vector system to be shared amongst the four audio and the video conferencing set-up."

An interesting part of the deployment here is the provision for archiving recordings done in any facility so that any of the recordings could be viewed later as and when needed.

The Central Control Room features an AMX Central Control Processor where live feeds and performance criteria of projection, audio, and video are available for monitoring...from all the four facilities. HDMI scalars installed all over ensure that input coming from anywhere will be catered successfully.



250 seater seminar hall



"I have the fullest optimism that the entire academic community, the state government, national level bodies and other undertakings will find the high quality audio system of the Auditorium as truly world-class for organizing national and international level programmes."

-M L Ranga, Vice-Chancellor

The stage features four layers of curtains motorized from the roof, and as many as 148 lighting fixtures mounted to the grid in front of the stage.

The Control Room in the upper floor on the rear end features in addition to the Christie 3-chip 2K DLP projector, a 32-channel mixer, and 14 units of 8-channel amplifiers powering as many as 84 speakers installed all around the auditorium, seminar halls, and open places.

The one 250-seater seminar hall is equipped with Christie's 7500 Lumen WXGA projector focusing on to a 200-inch diagonal screen. Another two smaller halls of 125 seats are treated with Sony 4000 Lumen projector and 50-inch diagonal screens. The conferencing mic systems in all these halls are from Bose Corp.

Challenges galore: Massive that the install has been, it came with its own set of challenges. While the discrepancies between the architectural and AV design raised their own concerns, weaving in an AV solution that suits both cinematic and presentation set-up was equally challenging. Moving in the large 19m x 9m screen onto the stage was another potential challenge.

On the other hand, that from the time of laying cables to commissioning the project it took a good three years, most of the systems spec'd in the BoQ have gone up in versions as well as costing. According to the SI, two important changes during the time were analog giving in to digital, and aspect ratios turning from 4:3 to 16:9 and 16:10. "This posed a big problem in that it implied higher costs," explains Malik. "More, we needed to make the install future proof for at least 10 years to come, so that the client doesn't have to change their systems for every short period."

Stage lighting was another potential challenge since the roof was pretty much fixed and nothing could be done when the SI moved in. so, it all needed a great deal of expertise and perseverance too from the SI essentially, and a lot more coordination between the SI and the Tech Team.

AV Science brought to place its best expertise, first drafting the client vision, and then crafting the install as per the vision. The final outcome, according to the SI was good, and made the GJU administration happy.

www.avscience.net
www.gju.ac.in



THE PROJECT FACT FILE

Project Name:

Ch. Ranbir Singh Auditorium,
Project Type: Audio-Visual Systems Integration in the Main Auditorium, three Seminar Halls, and Video-conferencing

Project Owners:

Guru Jambheshwar University of Science and Technology (GJUST) Administration

Process Owners:

Works Department, GJUST

THE TECH TEAM

AV Design Consultant:

AV Science Technologies

AV Systems Integration:

AV Science Technologies Pvt Ltd.

Lighting Consultants: AV Science Technologies Pvt Ltd

Stage design and set-up:

AV Science Technologies Pvt Ltd

Architecture consultant:

Architects & Interior Designers.

Third Party Inspection:

National Institute of Technology

GJU Tech Team

Er.A.K.Modi - Technical Advsiior)

Er.Ashok Alhawat - Superintending Engineer

Er.Jitender Singh - Executive Engineer

Er.Suvil Grower [Civil], SDE

Er.Raghuvir Singh [PHE]

