

INAVATE

www.inavateonthenet.net



'Push what's possible'
Christie CTO shares the future

What's next?
2014 brought to you by 4K, 3D & 4G

Turning the page
Library harnesses technology

Bright green future:
Smart buildings save energy

Visionaire has recently completed the latest phase of its project supplying IT and AV tools to the UAEU to advance presentation capabilities and create a paperless learning environment. Anna Mitchell heads to Al Ain to explore the university's male campus.

A tale of two campuses

In 2011 the United Arab Emirates University (UAEU) opened the doors to its female campus at Al Ain in Abu Dhabi. IT and AV integration works that would allow the university to deliver a "paperless and inkless" teaching environment were carried out by Dubai headquartered integrator Visionaire.

The self-contained campus contained residential buildings, teaching rooms and lecture halls as well as leisure and sports facilities and scooped an InAVation Award for the most InAVative Education Project at the 2012 ceremony.

Tech-Spec

Audio

Biamp Audia platform
Bose loudspeakers
ClearOne microphone mixing
Crown amplifiers
Lexicon amplifiers
Rave loudspeakers
Shure wireless microphone system
Soundcraft audio mixers
Soundsphere loudspeaker
Tannoy QFlex 48s with BeamEngine software

Visionaire continued to support and work with the University and two years after the female campus opened they unveiled its male counterpart. There are about 12,000 women and 5,000 men enrolled at UAEU but, apart from a difference in scale, the intention was to deliver virtually the same experience in both campuses.

In the more recently built male campus the latest technologies were utilised and installed but the principles behind the functionality

and design were largely mirrored from the original female campus.

The entire campus is based on an integrated IT-AV architecture in a massive hardware and software deployment of leading edge tools including Many solutions from Arrive Systems, a software and hardware vendor that launched in 2007.

Navigation around the 300,000m² campus is assisted with Arrive TouchPoint wayfinding units. Forty-four panels are dispersed across the site with a unit in the entrance of each building. The panels draw on content stored on a main server and navigation is intuitive with a function that will simply show you the quickest way to get to a desired destination. The content to this system is managed over the network with UAEU having the ability to update information content and video centrally.

A Cayin powered digital signage network also runs throughout the campus with content played out over approximately 200 Sharp 37" LCDs.

Content, including IPTV feeds using an Exterity solution, is delivered from a central server with displays 'grouped' around individual Cayin players so targeted information can be delivered to specific areas. Visionaire handled the design and layout of content displayed on the screens with assistance from UAEU's IT Services department and content management personnel.

The panels are controlled centrally by an overall

administrator. Various levels of access have been set up so local administrators in each building can customise certain content and functionality.

New additions to the campus incorporate a function hall that seats up to 1,000 people. A large printed screen, flanked by two Daktronics LED displays, acts a backdrop to a stage at the front of the Great Hall. Three floor boxes on the stage allow a presenter's podium to be placed in three different positions.

Tannoy QFlex 48 arrays, with QFlex BeamEngine software, are deployed here with column speakers on the stage and ceiling speakers above the balcony area. The audio system is based on a Biamp Audia platform and Soundcraft mixers handle 32 audio channels.

The entire space is covered by a Shure wireless microphone system with a mix of lavaliers and handheld mics. Digital mixing functions are handled by ClearOne and two dedicated gooseneck microphones are also mounted on the podium.

A mobile MediaSite powered solution can be used to record proceedings in the hall and output feeds to the Daktronics displays. Video sources include a Panasonic DVD player and a Dexon unit handles video-switching functions.

Chairs can be brought in and removed as needed and a tiered balcony provides permanent seating. A control room, at the rear of the balcony, looks out over the Great Hall. Operators can access control functions via a





wireless Crestron touch panel. Lighting pre-sets can be designed and saved ready for playback at events.

For large events Visionaire is on-hand to support the University. However, control and operation of the space is designed to be intuitive and easy to use for university staff and media systems departments.

The university has also added a 400-seat auditorium that can be used for a variety of events as well as handle any overspill from the Great Hall. In a similar way to the Great Hall, Visionaire has installed two Daktronics LED displays either side of a large motorised Da-Lite projection screen. A Christie DLP projector with LAN control, mounted on a Chief projector lift, fires onto the screen providing the ability to vary the display formats during events.

In a similar approach as to that taken in the Great Hall, three floor mounted input boxes are included on the stage to allow flexibility in podium positioning and an Audio-Technica wireless microphone mixing system has been installed.

Three PTZ HD Panasonic cameras, with an associated camera switching and mixing system, are installed to capture and record proceedings in the hall. Content is regularly uploaded to the university's intranet or recorded to DVD using a Panasonic recorder. Again Dexon equipment was deployed to handle video switching while Crestron units managed VGA switching and control processing. Crestron wireless and fixed

touch panels provide access to control functions.

A Televic congress system has been deployed in a new meeting room that incorporates a 108" Sharp LCD. Users in the room can control AV systems via an Apple iPad, which is housed in a wall docking station. Two Bose loudspeakers are mounted either side of the display and a podium is provided for a meeting chairperson.

Management and booking of all teaching rooms throughout the entire campus is handled by Arrive solutions. Arrive InfoPoint displays outside each room are connected to (and controlled by) a central server.

The InfoPoint interactive displays light up in red or green depending on room occupancy and can provide users with information on a session being held in a room as well as an overview of the room's schedule. A note system will inform students of changes and can be used by teaching staff who have user name and passwords to access the function.

There are two templates for classrooms at the UAEU. Smaller rooms house 20 students while the larger ones accommodate 40. There are also some larger lecture theatres.

Smart Technologies' interactive whiteboards with integrated short throw projectors are used throughout the campus with one unit in each of the smaller classrooms and two in the larger. Switching, scaling, routing and control functions within every room are



handled by Arrive RoomPoint processors and Multi-Array matrices.

Rave loudspeakers are deployed in all classrooms and in larger rooms an Arrive SoundPoint sound field system is included. An Arrive VoicePoint ceiling-mounted array microphone picks up the teacher's voice so they can speak normally and still be heard by students at the rear of the room.

Arrive CablePoint AV switching and input solution offers USB, VGA, headphone jack and HDMI connectivity from the lecturer's desk. Inputs are transmitted to the main system via one Cat 6 cable therefore cabling load is reduced inside the classrooms by providing active format management and switching at the input end rather than the source side as is traditionally managed. This has provided UAEU the ability to reduce heat and cable clutter, well as need to have unsightly racks in each classroom, since the systems are wall mounted.

A number of 60 seat classrooms utilise projection instead of interactive whiteboards. However, the addition of two Smart Technologies podiums, running the same application as the interactive whiteboards, ensure teachers can still access the same interfaces and functionality as in the smaller rooms.

Two Mitsubishi 3,000 lumen LCD projectors, ceiling mounted with custom brackets, fire onto Da-Lite projection screens. Arrive equipment handles switching and video processing functions.

The Great Hall accommodates 1,000 people and boasts Daktronics LED displays. The 400 seat auditorium uses a combination of Christie projection and Daktronics LED, sound reinforcement is handled by Tannoy.



< Eighty-five of the two hundred classrooms provide lecture capture using Arrive ViewPoint hardware and software solutions and OpenCast's Matterhorn platform, which also handles the content management and playlist solution. Access is granted with a passcode and different levels are set so that teaching staff have overall control.

Arrive ViewPoint provides managed rich media lecture capture with OpenCast Matterhorn managing the workflows and heavy-lifting required for video processing, publishing and optimizing the content with automated indexing. This enterprise class video management system was developed by leading Universities to provide the opportunity for building online video learning and the ability to create MOOC's (Massive Open On-Line Courses).

Five classrooms in the male campus deliver Cisco Tandberg powered HD videoconferencing. The majority of the time this is used to share teaching staff between the male and female campuses with the female campus housing a further five rooms. However, the system is also used to bring lecturers in to the Al Ain classrooms from anywhere in the world.

One PTZ camera points at the class while a second points at the teacher. Ceiling mounted microphones can pick up both teaching staff and students' voices. Visionaire had to install Sharp LCD panels, on extendable brackets, in the male campus' VC rooms.

When a video call between the two campuses is in progress the panel is extended out to face the lecturer. This means the lecturer can see the female class being taught but the male students cannot.

VC calls are controlled from a central office at the university so the lecturer is not distracted by the technology. In other respects the technology set up of the VC rooms is largely similar to the larger classrooms although larger rooms use projectiondesign projectors and Aten video switching equipment.

Visionaire mocked up a courtroom for law students, which is also linked to the female campus and outside world via VC. Mitsubishi projection and Da-Lite screens are also deployed here alongside a number of monitors. Control is accessed through a Crestron touch panel.

All teaching materials can be stored in a cloud-based system



[Top to bottom] Sixty seat rooms use Mitsubishi projection and Smart Technologies podiums; Large classrooms house two Smart Technologies interactive whiteboards; Input panels are provided on every desk and Arrive infrastructure handles switching and routing; Arrive TouchPoint wayfinder modules.

using Arrive CloudPoint. Teachers can access and display content via a central cloud managed Virtual Desktop Infrastructure (VDI) solution powered by Citrix and Arrive CloudPoint, directly from the interactive whiteboards or by logging into their area via a laptop or fixed computer. This means they do not have to carry any teaching materials and can access everything regardless of the room they teach in. Up to four iPads can also be supported in each classroom so students can get involved sharing content on the large displays.

With students even taking exams on iPads, Visionaire has provided the tools to deliver a completely paperless campus. And with so much technology packed into the campus the integrator has taken on an active role in training teachers to operate in-room technology. UAEU chose to deploy Apple's iPad tablet as the primary means of access for students. All the technologies in the campus were adapted to be able to benefit from this approach and each classroom was updated cost-effectively for use of Apple's AirPlay capability for wireless BYOD connectivity.

Students and faculty can share the iPad images wirelessly to the screens using Arrive's AirPoint wireless adapter which is connected to the existing Arrive RoomPoint devices in each classroom.

The task is greatly simplified because, regardless of the room, lecturers still access control through the same interface. Most of the teachers use the iPad application and Visionaire support is provided between 8am and 4pm every day.

Training sessions are held for new staff and faculty can request specific training if needed. A training portal administered by Visionaire is also available with courses on technology and product use. Teachers are encouraged to provide feedback which, in many, cases has led to delivery of new functionality within the software.

A large food court has a big projection screen and ceiling speakers, which are used for special events such as sports matches. Over in the male campus sports hall Visionaire deployed Daktronics LED in the swimming pool to act as a scoreboard, Soundsphere loudspeaker installations in both the sports hall and pool areas to deliver punchy audio and a number of Sharp LCD panels in the gym.

Visionaire has an office at the university and employs 12 full time staff at the campus to keep supporting UAEU's technology efforts while the UITS department develops internal resources to take up the entire operational role. It has worked with the university as the campus has grown and developed demonstrating that the infrastructure is truly scalable. 

Tech-Spec

Video

Arrive wayfinding system, InfoPoint, RoomPoint, CloudPoint, ViewPoint
Aten video switching
Cayin digital signage players
Chief projector lift
Christie projector
Cisco Tanberg MCUs and codecs
Crestron touch panels, VGA switchers, control processors
Daktronics LED displays
Da-Lite projection screens
Dexon video switcher
Exterity IPTV
Mitsubishi projectors
OpenCast Matterhorn lecture capture system
Panasonic DVD players/recorders, PTZ HD cameras
Projectiondesign projectors
Sharp 37", 108" LCDs
Smart Technologies IWBs, Smart Podiums
SonicFoundry MediaSite recording solution