

HA Design Group LLC having recently completed the new WFUV radio facilities located in Bronx, New York, shares the following story from Barry Thomas.

## From cramped classrooms to productive workspace

By Barry Thomas, CPBE CBNT

WFUV employs 25 to 30 people but also runs on the efforts of a full and part-time staff of around 75 student volunteers. All of those people had a hard time functioning in the original three-studio, converted-classroom facility. The new studios are located in the stately, Neogothic Keating Hall on the university campus across from the Fordham stadium, Houlihan Park. It was no surprise when the directions to the station included a walk downstairs into the basement of the beautiful structure. While I expect most college stations are relegated to the lower floors in out-of-the way places on the campus, this basement radio station was a wonderful surprise. The last thing you would expect would be light, airy facilities with skylights. The WFUV facility now includes eight studios, more offices and common spaces, a listener lounge and capabilities to support the demands of 21<sup>st</sup>-century radio.

### First impression

WFUV's lobby is flanked on one side with windows into a conference room that also houses a small portion of the many awards bestowed on the station. This flexible room is encircled with power, data and telecom outlets so it also serves as the phone bank room during the station's critical fund drives.



WFUV's Studio 1 is the main on-air studio. It's arranged in a conference table layout around SAS Rubicon console, CD players, Audiovault and Internet workstations.



Marketing and Communications Director John O. Platt prepares for his show in Studio 2.

Although the new eight-studio installation has exponentially greater production and editing capabilities than the previous facility, Evans ensured that the studios were used efficiently. To this end, most of the offices and workstations have their own editing facilities complete with a Protocols editor, HHB CD burner and a Telos telephone hybrid. This allows basic ingest and simple editing to be accomplished at the desk without tying up a production studio.

Two voice-over booths provide the same editing facilities but include a microphone, processing, Telos Zephyr Xstream interface and Broadcast Electronics (BE) Audiovault workstation so that the four primary studios can be free for complex work. The voice-over booths open to the newsroom with seven audio production stations, each with Protocols 002 and Newsboss workstations as well as phone interfaces. The news and office workstations use the flexible analog Dixon mixers for control, while the voice-over booths and all other studios are part of the integrated SAS 32KD system with Rubicon work surfaces.

All the studio spaces and voice-over booths are Wenger V-Ready booths. These were selected because of their standard construction, competitive price and flexible configuration options. It was helpful to know that the studios could be dismantled and reassembled elsewhere if necessary. Each studio features the typical track system for task lighting but also has the most important feature — bright office lights so technical service doesn't require a flashlight or bat vision.



On-air/production talent Greg Jamborici collects e-mail production elements for his show in Studio 3.



The heart of the tech center is the blue dual-framed SAS 32KD router cabinets. In the far racks you can see some of the many BE Audiovault workstations that are extended to studios and offices by the Avocet KVM system.

The entire facility is built around a two-frame SAS 32KD router. This provides the greatest flexibility and simplicity for the inevitable changes. Although each studio has at least two 26-pair audio trunks, surprisingly little is connected this way, favoring the fiber and CAT-5 networking offered by the SAS system. The low profile Rubicon consoles and meter bridges also help improve sight lines and acoustics.



Live music studio A showing the main entrance on the right and the extra large load-in door. Notice the remote-control camera near the hallway door used for the video feed to the listener lounge.

All Audiovault, Pro-tools and Newsboss workstations are installed in the central technical areas providing simplicity for sound and cooling concerns. An extensive Avocent KVM system extends and connects the CPUs to their workspaces. The technical center has two rows of GKM racks tied with the overhead tray system that connects to each studio. This tray was sized to allow for easy management of the optical fiber, CAT-5 and audio trunks that interconnect the studios. Outside of the technical center the cable tray is hidden above the drop ceiling until it connects to the wiring chases in each Wenger booth. Because the station is in the basement, radio reception is almost nil so the technical center also houses WFUV's multi-stream audio monitoring/distribution system for the offices. The room also holds NPR's Content Depot receiver system, the WFUV.com streaming audio encoders and an HD Radio listening/evaluation post.



Keating Hall is home to the WFUV studios.

## Studio tour

Studio 1 is the primary on-air studio with ample workspace for the announcer and three guests. The conference table setting afforded the operators with excellent sight lines and an uncluttered, excellent-sounding workspace. The studios all have LCD displays for the Audiovault, Internet, Newsboss and Protools PCs that contribute to cooler and more space-efficient work areas.

Studio 2 is the technical equivalent but it's slightly smaller. It has identical furniture and equipment because it serves as the alternate studio for service to Studio 1.

Studio 3 is the primary radio production studio, similar in size to Studio 2 but with full production capabilities and an upgraded, Neuman U-87 microphone. Studio 2 and 3 face into a shared talk studio, Studio B, which is equipped with four microphone positions on a modified triangle table. This allows either studio to become the control room for programs that are being produced in studio B.



Studio B's pie wedge table arrangement makes excellent use of space for talk programs while offering flexibility and control. The studio can be operated from Studio 2, through the left window and Studio 3, through an identical window on the right.

Nearby, Studio 4 features similar capabilities with Studio 3 but with a significant enhancement. To the right of the standard radio production position with the 20-fader Rubicon surface, WFUV installed an Allen-Heath GL4000 mixer and extensive outboard processing for live music. Studio 4 faces into Studio A, a 14' x 14' live music studio that is used for the extensive live music programming offered by the station. There is audio and control connectivity between Studio 4 and the performance space. Nearly three times larger than the previous performance space, the old studio required station staff to dismantle and remove the keyboards and drum kit on a regular basis to accommodate different performances. The constant change made it difficult to consistently mic the drums, a process that can be tedious to repeat. The new room allows the kit to be left standing and miked optimally. There is a large separate load-in entrance to the room allowing musicians to bring instruments and equipment without passing through the halls of the station but directly to a nearby loading entrance to Keating Hall. Through that entrance the large air space between the Wenger studio enclosure and the building walls can be seen. This space is not only useful for sound isolation, but also for temporary instrument case storage and a secluded location for the power amplifiers for the studio and listener lounge speakers.



The newsroom is a collaborative workspace encircled by audio editing and news production workstations like this one. Each position has a Protools 002 system as well as the Newsboss workstation.

This studio is equipped with a variety of microphones including EV RE-20s, which are used in the broadcast studios; AKG C3000s, C535Bs and SE300Bs as well as the concert standard Shure SM58s, SM57s, Beta 57s and 87s. The drum kit was miked using tiny condensers made by nearby New Jersey manufacturer Applied Mic Technology.

Studio A has been fitted with remote-control cameras in each corner with video that feeds a large monitor in a huge, sky-lit listening and common area, complete with comfortable seating and a large plasma-screen monitor to offer listeners a view of the live musicians during their performance at WFUV. That video feed may be incorporated into the extensive Web presence of [www.wfuv.com](http://www.wfuv.com) in the future.

### **Audio playback**

Although the BE Audiovault is used as the central audio storage system, music on WFUV is still played from CD and vinyl. Each studio even has a venerable Technics 1200 turntable, and notably lacking the typical pile of things these devices usually collect on top. That commitment to conventional playback sources required planning for ample and flexible storage space for the music library. The library was carefully outfitted with a moving and configurable storage system to allow for additions and expansion. There was even enough space for a listening/quality control workstation.

WFUV's new studio project suffered typical delays and complications but after 10 months of construction, the station now has a strong facility many times larger and more flexible than before and reliability to allow Evans and O'Hara to concentrate on the next two major projects like a transmitter site move, tower deconstruction and an HD Radio upgrade. The new facility offers the station almost infinite flexibility while providing a comfortable and ergonomic space to serve as the stage for WFUV's important university and community service.

## Equipment list

ADC Icon block wiring system  
AKG C3000, C535EB, SE300B  
Allen and Heath GL4000 mixer  
ATI Bi400, DA2016-2 DA, DDA112-XLR digital DA, P1000-2 phono preamp, UB400B RCA to XLR converter  
Atlas Sound PB21XEB mic stand, TE-E mic stand  
Audio Precision Portable One test set  
Avocent AMX5010 KVM switcher  
Belden 1500A CAT-5e, 1802B two-pair shielded, 9116R 75 ohm coax  
Broadcast Electronics Audiovault, Newsboss  
Burk ARC-16  
CBT Systems on-air light  
Comrex DH20 telephone hybrid  
Crown CE1000A power amp  
Cyber Research GFA 1710B  
Datatronics Technology Pronto EZ DA6551 CD duplicator  
Denon DN-C680 CD player  
Digidesign DIGI002R Protocols  
Dixon Systems NM-250 MKII newsroom mixer  
Edcor Match Mates amplifiers  
Electro-Voice RE20, RE-27 N/D  
ESE ES-150 master clock system switcher, ES-243 time code DA, ES-289A/P2 NTP time server, ES-911/GPS/BLACK master clock, LX-161U/UL display, LX-5105, LX-5105/UL, LX-5112/UL, LX5118/UL clocks  
Fostex 6301B3E personal monitor  
Galaxy Audio Hot-Spot VC  
GKM racks  
HHB CDR830 CD recorder  
Krone blocks  
Lexicon LEXPCM81 digital effects processor  
Lynx One studio interface  
Mackie HR824 studio monitor  
McCurdy Radio ATS-100 audio test set  
Middle Atlantic rack hardware, RL10-45 and RZ10-45 racks  
Moseley Lanlink, Starlink 950 MHz STL  
Neuman U87Ai mic  
O.C. White 51900-B mic booms  
Orban Optimod 8400-FM  
Panasonic SV-3700 DAT  
Presonus ACP88  
Raxxess HH-2 headphone hanger  
Rolls RS79B tuner  
Sage Endec  
SAS Riolink, 32KD router, Rubicon  
Sennheiser HMD25-1 headset  
Shure SM-57, SM-58, Beta 58, Beta 87  
Sony MDR-7506 headphones, MDS-JE480 Minidisc, PCM-R500 and PCM-R700 DAT, RDR-GX300 DVD recorder, STR-DE698 and ST-SE370 stereo tuner, TC-WE475 cassette  
Stanton 681EEEMKIII cartridge, D6800EEE-III stylus  
Symetrix 528E processor  
Symetrix 528E voice processor, 6100 broadcast delay  
Tascam 122MKIII cassette, EV-RA1000 master recorder  
Technics SL 1200, SL-1210M5G turntable  
Tektronix 760A audio monitor  
Telos Assistant Producer, Desktop Director, Telos One digital hybrid, Telos Twox12, Zephyr Xstream  
TFT 999 digital insertion unit  
Ultimate Studio MS-45B2 monitor stand  
Wenger V-Ready booths  
Whirlwind MS-12-0-NR-050 12-channel XLR snake  
Yamaha MSP3 and MSP5A monitors, SPX2000 processor