

Built for SUCCESS



The human element
came first when
WKLU rebuilt.



Many studio rebuilds in medium and large markets are attributed to the consolidation of stations within a facility, so when a stand-alone station completely rebuilds its transmitter and studio facilities it is an undertaking to watch. This is the case with WKLU, which is owned by Indy Radio and licensed to Brownsburg, IN, a small town just west of Indianapolis.

The station signed on the air in 1991 as a drop-in signal, but it never really made much of an impact on the Indianapolis market. Before being sold to Indy Radio, it delivered a deep-cut classic rock format. When the station was purchased by Indy Radio in 2005, the new owner, Russ Oasis, put his devotion to radio into the station and rebuilt the studio and transmitter sites to better serve Indiana's capital city.

When it was purchased, the studios were in a house that at one time was a pet store. The facility was built on a limited budget and maintained on an even more limited budget. The studios were cramped and used lots of consumer equipment to supplement the well-worn broadcast equipment. None of the old equipment was used in the new facility.

The plan was to build a facility that would stand out. Oasis wanted the best possible facility; no cutting corners, no just-good-enough approach. The end goal was to build the station to be a showplace for visitors and a stage for the announcers to perform on proudly.

Where to begin

The first step was designing a facility that was warm and inviting. This goal was obviously achieved when you enter the offices and see the lobby. While facility showcase articles in *Radio* magazine focus on the technical operation of the facility, the lobby is worth mentioning because it sets the tone to visitors when they arrive. The lobby isn't a sterile room that feels like a dentist's office. It looks more like a ski lodge than a business, especially with the large stone fireplace. This attention to creature comfort is carried throughout the facility.

To design the facility, Oasis hired Roy Pressman, an engineer he had worked with in Miami, FL. Pressman has designed many facilities and now operates his own system integration company and equipment dealership. Pressman was instructed to build it right, build it well, build it for people and build it to be the best that it can be.

The first step was locating a building for the studios. At the same time, work had begun to relocate the transmitter site to put a stronger signal over the Indianapolis metro. After looking at several office locations, a building on the north side of Indianapolis was chosen. The two-story building was for sale, and Oasis bought it with plans to build the radio station on the second floor and to lease the space on the first floor to a tenant.

One advantage to the building is that it housed another radio station several years ago. That station built the monopole tower adjacent to the building and provided a suitable spot for the station's antennas.

Another business occupied the building between the first radio station moving out and WKLU moving in, so there was no existing broadcast infrastructure in place. Also, the tower was

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in good shape, but the transmission lines had to be replaced.

Pressman's facility design called for double-layer drywall construction to minimize sound leakage between the studios. He also specified acoustic doors, which are heavy. The additional weight for the studios is considerably more than a traditional office space, so the second floor structure had to be reinforced to accommodate the load. Reinforcing members were welded to the floor supports.

Pressman sketched a basic plan of the facility then worked with a local architect to draw the final plans. Pressman also designed the studio furniture, which was built by Harris. There are three studios; are all basically the same. The room dimensions of the three are slightly different, but from an equipment standpoint, the air studio and production 1 are identical. Production 2 has the same basic room layout but not as many audio sources. Any can be used for on-air or production, although the air studio is slightly larger than the other two studios. A second station could be operated from the facility.

The furniture allows flexibility for any format, whether it was music- or talk-based. The large rooms are also designed for live radio with a full air staff 24 hours a day. WKLU does not voice track any of its programming.

Backup for the backup

The three studios are indicative of the attention given to redundancy. Two studios would normally be enough to handle the on-air and production needs, but the third studio provides an extra layer. Equipment redundancy provides for instant backup if it is ever needed.

One example of this is the complement of Scott Studios SS32 systems. There are two SS32 systems



The monopole tower was already built at the site, saving the station from having to erect one.

in the air studio and production one. Except for production two having only one SS32 system, each studio is similar in its equipment complement.

It seems that every new facility struggles with finding the perfect balance in the HVAC system that is shared between studios. To eliminate this problem and to eliminate a possible single point of failure, each studio has its own HVAC system. The systems also have humidity-controlled HVAC to maintain a constant 40 percent relative humidity regardless of the temperature. This maintains human comfort and prevents static build-up.

Building power has two layers of backup. A 100kW generator fed by a high-pressure natural gas feed can support the facility indefinitely if necessary. To cover the switching time from commercial power to generator, a Liebert UPS carries the load during the three-second switch. The UPS will support the facility for 30 minutes in case of a generator failure. This 30-minute buffer also allows the station to gracefully shut systems down instead of watching them crash when the power disappears.

The audio network is built on a Harris Vistamax router. The RMX Digital consoles are connected to the router, but they are also wired so that they can be used on the air directly if necessary. Bypassing the Vistamax means that some resources will not be available, but the station will still be on the air with most of its audio sources.

Dual Moseley Starlink STLs provide a main and standby link, and the Telos Zephyr Xstream can also be used as a third STL path if necessary.



Another view of the air studio. The two production rooms have nearly identical layouts.

Fine touches

There are several finer details that add to the facility's ease of operation. The LED signs next to the console meter display is one of these details. Instead of placing large signs across the room, Pressman installed smaller signs that are directly in the announcer's field of view. One sign is fed by the Sage Endec. The other sign is fed by a Sine Systems MBC-1, which provides notifications for the profanity delay, a studio being switched on the air, a generator failure and other important events.

There is a plasma screen in the lobby behind the receptionist that normally shows station information and the station logo. When the announcer turns the mic on, an in-studio camera is activated. The camera pans and zooms to focus on the host position and is switched to feed the lobby screen. When the mic is turned off, the camera returns to its original position. The pan and zoom action is to eliminate the paranoia of always being on camera.

The attention to detail was even applied to the microphones and mic processors. Everyone has his own favorite equipment choices, and Oasis and Pressman had their preferences. Regardless, they took the time to assemble several mics and several mic processors and try a variety of combinations. Oasis favors the Sennheiser MD-421 as an announcer mic. After




The lobby is warm and inviting; like entering someone's living room. This is part of the philosophy of building the facility for human comfort.

Equipment list

360 Systems Instant Replay
Acoustic Systems doors
Aphex 230 mic processor
Audio Science BOB24
Audion Labs Vox Pro
Barix Instreamer
Broadcast Tools 8.1 DAS, BOR-4, Silence Monitor III, SS8.1 model 2
Burk ARC-16 with Autopilot
CBT Systems on-air lights
Circuitwerkes Telco-6
CPI Wireframe
Crown K1 amp
ESE ES-104A time server
Eventide BD500, Eclipse
Fostex 6301B
Harris furniture, RMX Digital consoles, Vistamax frame
Henry Engineering Micromixer
HHB Burnit Plus
Human Scale M7 computer monitor arms
Inovonics 531
JBL 4412A
Krone blocks
Liebert Enfinity UPS
Middle Atlantic Power strips and racks
Moseley Lanlink 900, Starlink SLQ9003Q
Neumann BCM 104
O.C. White mic booms
RDL FP-BUC2, combing amps
Scott Studio SS32
Sennheiser MD421
Sine Systems MBC-1
Tascam 112MKII, CD-450 CD
Telos 2X12, Profiler, Zephyr Xstream, Xport
Tieline Patriot

side-by-side mic processor comparisons, the Aphex 230 was chosen. As a final step, the Neumann BCM 104 was tried with the 230, and the final element was decided. The Neumann mics are used in the host positions, and the Sennheisers are used on all the guest positions.

A Telos Profiler was installed to log the station. To allow announcers a way to listen to their shows in their cars, each studio has a cassette deck wired as a skimmer. Then they quickly realized that auto cassette decks are no longer common, so the HHB Burnit Plus CD recorders were installed as another skimmer.

With the studios complete, WKLU is turning its attention on the final upgrade to the transmitter site. The station will begin HD Radio transmissions in May, and it has already begun developing its HD2 and HD3 signals. When the HD Radio signal is activated, WKLU will stream all three signals online using Barix Instreamer encoders. This will allow the station to begin building a listener base online while the HD Radio receiver base grows. 

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