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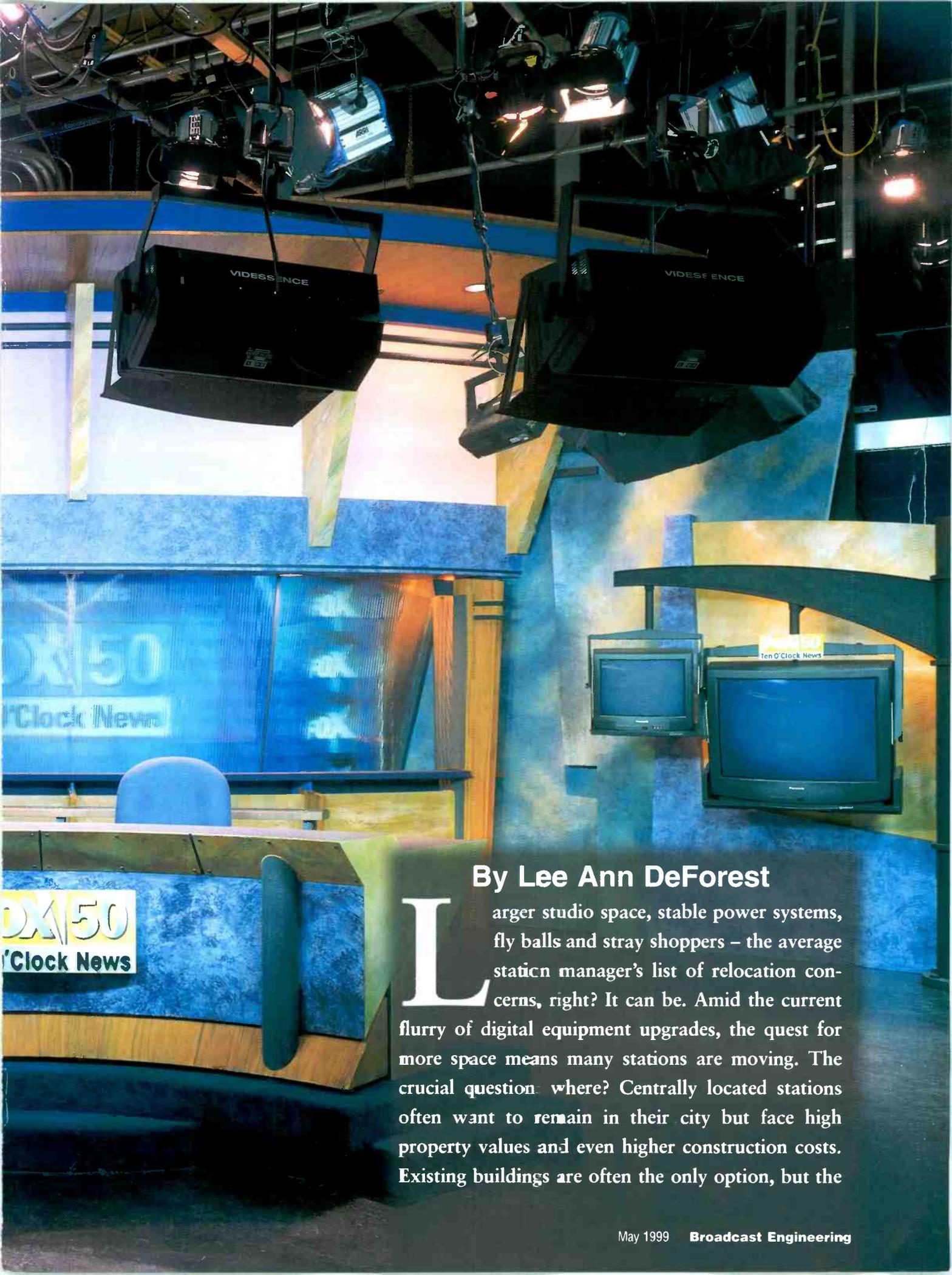
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WRAL / WNOI

Fox 50's news set at WRAL, Raleigh-Durham, NC.
Photography courtesy Rees Associates. Photo © Andrew Lautran.



By Lee Ann DeForest

Larger studio space, stable power systems, fly balls and stray shoppers – the average station manager’s list of relocation concerns, right? It can be. Amid the current flurry of digital equipment upgrades, the quest for more space means many stations are moving. The crucial question: where? Centrally located stations often want to remain in their city but face high property values and even higher construction costs. Existing buildings are often the only option, but the

WRAZ / WNOL

challenge is to find a place with enough space.

Two stations, WRAZ in Durham, NC, and WNOL in New Orleans selected existing, but unusual, new homes with the help of Rees Associates Inc., a leading architectural, interiors and facilities planning firm that specializes in broadcast building design. WRAZ moved into an office building overlooking right field at the Durham Bulls

Founding in 1995 as part of a local marketing agreement owned by Capitol Broadcasting, WRAZ aired WB programming, its own local public service programming, and news from WRAL. The two stations shared equipment, studios and staff. When the FOX network granted Capitol Broadcasting's petition for affiliation in 1996, Capitol decided it was time for WRAZ to establish its own public presence.

Space in the current building was tight. Several spots in and around Raleigh were recommended, but the station had other ideas.

Construction was already underway on the \$9.6 million Diamond View building overlooking the Durham Bulls

plete. WRAZ now faced the daunting task of adapting its original ideas for the new station to the physical constraints of the long, narrow space available. Station engineers planned the facility design with Rees Associates. System integrator The Whitlock Group was then brought in to finish the equipment planning. Due to the time constraints of the fast-track project and WRAZ's small staff size, Whitlock was also chosen to complete the wiring and installation.

The lack of open space around the park hindered placement of five satellite dishes, a key initial decision. The four steerable 4.5 meter Andrews KU/C-Band dishes, one Fox dish and their

accompanying racks were positioned 700 feet away from WRAZ's technical center in the corner of the left field parking lot. The receivers for the five satellite antennae are connected back to the facility by single-mode multifiber link because of the extensive distance.

WRAZ elected to continue using the news program from WRAL, taking advantage of WRAL's established credibility and number one position in the market. This required WRAZ to position a strong microwave relay antenna to receive the signal from Raleigh. The station was able to place the eight-foot-diameter Andrew High Performance antenna amid the right field light bridges, which are attached to the Diamond View building. WRAZ also added a four-wire intercom circuit between the two facilities to allow live coordination for the news show. The system is installed

over the STL and intercity microwave subcarriers.

Diamond View was designed as corporate office space, which made wiring of the facility a challenge. The floor was already set, forcing station engineers to choose overhead wiring. Space above the ceiling was minimal and not easily accessible. Although full size racks were used, routing was difficult. The Whitlock Group staff ran numerous spare wires — in some cases, up to an extra 25 percent more — to each location in the station to limit future



Rack room showing distribution amps, patch panels and a Leibert computer room air conditioning unit in the background.

Athletic Park, while WNOL's new facility is under construction inside the upscale New Orleans Centre mall. Moving into pre-existing buildings not meant for television stations has required extensive planning and design creativity. The WRAZ and WNOL teams have used both to implement the latest in digital technology into these nontraditional new locations.

A relative newcomer to the broadcasting world, WRAZ began life as a WB affiliate inside the studios of its sister station WRAL in Raleigh, NC.

Athletic Park. Owned by Capitol Broadcasting, Diamond View kept the deal within the company, while allowing continued support of Durham revitalization efforts. The 18,000 square foot first floor of Diamond View offered WRAZ both an exciting scenic view and the chance to bring business and visitors to downtown Durham.

Technical hurdles

The Diamond View space created a variety of technical challenges. The shell of the building was already com-

WRAZ / WNOL

trips back into the ceiling.

The separation from WRAL meant that WRAZ had to purchase new equipment for all areas of station operation. The decision to use WRAL's news facility meant that WRAZ was not required to have a news room or studio, news editing facilities, or multiple sets of field gear, saving the station time, space, and money. Although the new facility does have a small studio for limited local production, it is not currently outfitted for broadcasting.

Purchasing new equipment allowed station engineers to take advantage of the latest in digital technology. Obtaining this technology, however, posed

yet all of it arrived in time for installation.

Station engineers creatively handled the short time allotted to upfit the Diamond View building. Because all of the equipment was new, every piece and wire had to be tested for possible bugs. While walls were placed in the space, the entire technical facility was prewired and powered up in a warehouse. Due to the sensitivity of the digital equipment, a professional moving company was hired to transfer the filled racks to the station for installation and system tests as space became available.

The new WRAZ has been designed with a strong eye to the future of the digital industry. Every piece of equipment was chosen to create a fully digital WRAZ, ready for adaptability to DTV. Anchored by a GVG 7000 series 128 X 128 routing switcher (currently populated to 64 X 64), a serial digital

sion remaining analog. The plant will handle multiple master controls and has a digital-ready microwave. A new digital transmitter and tower are currently under construction. WRAZ-TV FOX 50 will be ready to meet its FCC-mandated deadline of Nov. 1, 1999, for DTV. The WRAZ team was successful in adapting the unusual Diamond View building space to accommodate all of their current and future digital broadcast needs.

WNOL

The architects at Rees Associates faced a similar spatial challenge with the design of the new facility for WNOL-TV, WB 38 in New Orleans owned by Quincy Jones Broadcasting, LLC. WNOL is accustomed to inhabiting unusual spaces: the station's current home previously housed an auto dealership. Facing limited space and the impending expiration of their lease, WNOL's leadership began the search for a new home over two years ago.

Station management set a list of goals for the new location. WNOL needed expanded studio and office space to accommodate a growing operation, both on-air as one of the top-rated Warner Bros. affiliates in the U.S. and as a production house. Studio 38, WNOL's production arm, handles a constant flow of commercials and music videos, is the home of a local syndicated cooking show, and rents the studios and suites for editing and production. Additional production space was greatly needed.

The price of real estate in New Orleans also influenced the search of nontraditional sites. While costs have always been high, revitalization projects throughout the city, particularly in the Central Business District, have driven land and construction costs even higher.

After months of searching, they settled on The New Orleans Centre, an upscale business, hotel and shopping complex located adjacent to the Louisiana Superdome, Hyatt Hotel, and the new 18,000-seat New Orleans Sports Arena. This area is the hub for special events in the city, including the



Rack room showing a news ASC server, a Grass Valley Group routing switcher, and the station's ASC server.

its own problem. WRAZ engineers began ordering equipment at the end of April and early May of 1998, with building occupancy tentatively scheduled for July. WRAZ had to pressure vendors and manufacturers to meet tight delivery times. Much of the equipment was delivered at the last minute,

601 routing infrastructure was selected to ensure an easy transition to a variety of formats. Another example is the Leitch DES-6801, which now converts all analog video sent to the satellite receivers to serial digital format.

Everything produced by WRAZ is digital, with only the actual transmis-

WRAZ WNOL

NFL Saints, Tulane University football, professional hockey, and future Super Bowls. The Centre itself hosts approximately 30-40,000 visitors each week, offering excellent access to the community. However, like WRAZ, the space itself was long, narrow, and not as large as originally planned. Rees Associates and WNOL's planners worked together to devise several creative solutions to meet all of the station's needs.

Taking shape

The shape of the space is unique, wrapping around the mall's glass and steel atrium. To take advantage of WNOL's new storefront location, station executives elected to make the on-air operation visible to the public. Operation and control areas were placed around the semi-circular atrium, bringing major studio functions front and center.

The narrowest part of the space was the center, a semicircular area only 35 feet deep. The designers placed master control in this focal point, which led to a traffic flow problem in the operational area. The master control room would become the only corridor between the edit suites and tape room, creating a busy distraction in an ordinarily calm space.

Rees Associates' solution was to create a hallway behind the master control racks, taking advantage of a typically "dead" space used to access equipment. By mounting the seven custom-built racks through the wall, the space behind the racks became the major passageway connecting the production area with operations, leaving master control isolated and quiet.

Carving a large, open studio out of property originally designed as retail space was a major concern. Station management wanted the new studio to be a minimum of 60 feet by 60 feet. The unusual shape of the space dictated that the studio be placed at one end of the facility. With the building's support columns approximately 30 feet



Tape room showing two Sony one-inch machines, JVC Digital S tape machines and a Panasonic M-2 tape machine.

apart, one column supporting the roof must be removed to open up a clear 60-foot studio space. A large steel truss installed on the roof will support the ceiling and studio lighting grid and

will also serve as the mount for the studio's four 4.5-meter satellite dishes.

With several basic design problems solved, focus shifted to the creation of

WRAZ equipment list

- JVC Digital S videotape format
- GVG 7000 series 128 X 128 routing switcher (currently populated to 64 X 64)
- GVG M-2100 master control system
- GVG model 2200 production switcher
- Chyron Liberty Paint System
- Chyron Aprisa Still Store System
- Chyron Max! Character Generator (Production Control)
- Chyron Maxine Character Generator (Master Control)
- Two Avid Media Composer 1000 edit suites
- ASC/Leitch VR-300 system for commercial playback
- Four Andrew 4.5M steerable antennas feeding 12 CKU receivers (three per dish).
- Leitch DES-6801 A/D converters
- Leitch equipment for audio and digital video distribution
- Ikegami HL-45 W digital camera with switchable aspect ratio (studio camera)
- Microwave Radio Corporation microwave equipment

WNOL Equipment list:

- Sony DVS-7250 digital production switcher, with two channels of DME 7000
- Wheatstone audio board
- Philips Jupiter / Venus video routing
- Nvision AES digital audio routing
- Sony 9100 production editor
- Graham-Patten audio board
- Sony Digital Betacam and SX VTRs
- RTS Adam intercom / IFB system
- Avid 1000 with 3-D
- Philips LDK-9 studio cameras with digital output upgrade
- Sony DVW-700WS field cameras
- Odetics system automation with Hewlett-Packard MediaStream servers
- Philips Saturn master control switcher
- DigiCart and Short/cut audio systems (360 Systems)
- Tektronix test scopes
- Ikegami & Sony monitors
- Tektronix, Sony & Leitch A-D converters
- Nu/Comm digital STL/TSL microwave system
- Patriot 4.5 mm. KU / C-band downlinks

WRAZ / WNOL

a digital production center containing multiple-format edit suites and a large two-tiered control room. Over the past two years WB38 has been slowly retiring its analog equipment and upgrading its digital capability. WNOL's engineers are using the move as the deadline to complete the transformation.

WNOL's engineers worked with system integrator Beck Associates of Austin, TX, to evaluate the station's equipment. The process began with the selection of an Odetics/Hewlett-Packard disk-based commercial playback system. One HP MediaStream drive was put on the air in March, 1998, replacing a variety of 11 Betacam BVW-40, 10, and PVW-2800 tape machines that had been running for over ten years.

When the facility is ready this spring, a second MediaStream will be installed and interfaced with the new Phillips Saturn Master Control switcher. This will allow the new system to be completely tested and the staff trained prior to putting the new studio on the air. Once the switch is made, the Odetics system from the old location will be moved and mated with the new system.

Additional analog tape machines and the station's extensive program library, containing thousands of BetaSP-formatted movies and programs, were also concerns. Digital BetaCam was initially considered for the station-wide digital format and then rejected due to prohibitive costs. Instead, WNOL became one of the first station to employ the new Sony digital SX format, which plays all older Betacam formats and is more cost-effective.

Although all audio and video routing will be digital, WNOL will accommodate its lingering analog needs by keeping two BetaSP machines in operation. The station will also place several frames of analog-to-digital and digital-to-analog converters, both audio and video, at key points in the station. These will be dedicated to specific analog machines to seamlessly meld these islands into the routing for any opera-

tor.

Like WRAZ, WNOL anticipated the transitional future of digital broadcasting. The output of both the Master Control and backup switchers will be multiplexed into one data stream with various control data for the studio-transmitter link (STL), main, and backup transmitters. This signal will then travel over a pair of fiber optic links to the top of an adjacent 26-story office tower and into a 7GHz digital microwave transmitter. The digital microwave system being installed can transmit multiple signals of various combination, both standard TV and HDTV.

On the edge of a salt marsh nine miles away, the digital signal will be converted to analog again and fed to the Channel 38 main transmitter. Control and other transmitter data will then be multiplexed and sent to a transmitter-studio link (TSL), returning to the New Orleans Centre studio up the same pathway. The STL/TSL is also ready for future multicasting and digital broadcasts, allowing WNOL to grow with the evolution of the digital television industry. While New Orleans is not slated to offer DTV until 2003, WNOL currently plans to begin DTV

WNOL Design Team

Client: Quincy Jones Broadcasting, LLC

Gary Furlow, Director of Production & Operations

Architect: Rees Associates (Oklahoma City, OK)
Bill Howell, Project Designer
Kyle Lombardo, Project Manager
Karen Bishop, Project Architect
Angela Mayer, Interiors

Contractor: Broadcast Building Company (Jacksonville, FL)

Broadcast Systems Consultant: Beck Associates (Austin, TX)

Mechanical Engineer: Davenport & Associates (Oklahoma City, OK)

Electrical Engineer: EE Systems Engineering (Oklahoma City, OK)

Interior Design Consultants: Crestia & Staub (New Orleans, LA)

transmission in late 2001.

The placement of a television station in an unconventional and unprepared space can be done, and it is often a viable and economic option available to station management. Drawing on the experience of Rees Associates' and systems integrators The Whitlock Group and Beck Associates, WRAZ and WNOL have made the most of their space, whether it's next to a ball-park or inside a mall. They have shown that with creativity and careful planning a non-traditional space can provide great aesthetic and operational opportunities. Both stations are ready to make a smooth transition to the ever-changing future of digital broadcasting. ■

Lee Ann DeForest is a freelance writer for Ballas & Partners, Richmond, VA.

WRAZ design team:

Client: Capitol Broadcasting (Raleigh, NC)

Jim Goodmon, President
Paul Pope, Station Manager of WRAZ

Tommy Schenck, General Manager of WRAZ

Tom Beauchamp, Corporate Chief Engineer for Capitol

Jim Gamble, Chief Engineering Manager of WRAL

Architect: Rees Associates (Oklahoma City, OK)

Bill Howell, Project Designer
Kyle Lombardo, Project Manager
Steve Stovall, Project Architect

Contractor: Bovis Construction

Broadcast Systems Consultant: The Whitlock Group (Virginia Beach, VA)

Mechanical Engineer: Davenport Associates (Oklahoma City, OK)
Steve Davenport

Electrical Engineer: EE Systems Engineering (Oklahoma City, OK)
Roger Edwards

Interior Design Consultant: Van Stavern Design Group (Oklahoma City, OK)



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