

appropriate design fixtures and techniques to greatly dampen sound and quiet the television operation spaces. The acoustic design utilizes a building shell within the outer building structure to isolate and absorb exterior noises from the internal technical operation areas, including the acoustic isolation of new utility systems for power and HVAC.

The next challenge was to develop a technical blueprint that would take advantage of the latest technology and techniques to cover existing needs and anticipated future growth. More than 20 years of origination expansion had gradually progressed via a series of individual channel investments. In the new facility scenario, a shared infrastructure made great sense, but how were the individual channel technical requirements to be best served? Finding the right combination of shared vs. dedicated technical components emerged as the key design consideration. The design team aimed to configure and size the underlying infrastructure to achieve economies of scale, while also tailoring the rooms and spaces to meet the differing needs of each channel. Moving away from a "one room, one channel" orientation became necessary to produce efficiencies, even though the layout had worked successfully for past incremental channel expansion efforts.

Goals for the project included meeting each channel's needs, improving the signal quality with the latest digital technology, establishing greater operational flexibility and providing redundant capability for plant systems and signal paths.

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A unifying infrastructure

The new facility provides broadcast capabilities for RNC's entire broadcast "assembly line," which covers the gamut

from signal ingestion, program editing, promos and interstitial creation, quality control, and live and recorded playback through automated multichannel master control and satellite uplink. The design team catalogued each channel's unique requirements and categorized

recorded programming, which includes long-play server-based programs; live television events such as sports programming; and interstitials and promos. These different operational processes led to alternative master control room designs.



The majority of the programming the station takes in is ready to air, but customization and preparation is often needed. Pictured is one of the two main linear online editing rooms, utilizing a GVG Kalypso two-M/E production switcher and an Accom Axial 3000 online editing system.

the key similarities and differences in order to design an overall facility approach. The infrastructure was developed to provide ample capability to each channel in the form of router matrices, audio and video I/O, physical space for operations, pre-production activities, and other parameters.

The complexity of sports channel programming necessitated the flexible shifting of resources between live and recorded playback methods. Complicating the sports programming further are the geography-driven, program-specific split feed requirements and other important viewing rights issues that dictate specific origination instructions on a program-by-program basis.

Another consideration was HD capability. RNC originates HD programming on a nightly basis for FOX SportsNet New York. Among the integrated HD solutions in the facility is a Dolby AC-3 ready audio and HD-ready cable plant, along with patching systems that can distribute 1.5Gb high-definition video and Dolby E audio signals. The wideband routing systems are also

The RNC facility originates 16 individual program channels presently, with three types of programming: automated delivery of previously

capable of supporting 1.5Gb signals facilitywide.

Facility layout

It was determined that equipment and system solutions would be inte-

and multichannel operation controlled by a reduced combination of rooms and operating staff. A different master control solution is used for the long-play programming channels.

Pre-production areas are used for the

and connections. The facility manages more than 16 uplinks and downlinks, as well as distribution services to the metro area cable systems. The technical operations center (TOC) manages all the telecommunications and satellite



RNC created flexible "clusters" of multichannel control rooms to allow switching between individualized live programming and control of up to four channels in multichannel mode. The single-tier control room above includes a GVG M2100 master control switcher, GVG Profile XP servers, and Sony monitors and VTRs.

grated within similar room layouts to the greatest extent possible to support the free movement of operations staff throughout the facility. A key facility design concept was the creation of flexible groupings of multichannel control rooms, called clusters. The facility utilizes three clusters of four rooms each to meet the needs of the various sports, news and live programming channels.

ingestion of programming materials and the preparation of content files for air. Each master control room in each of the clusters shares these large areas to prepare its individualized programming for eventual automated server payout. Centrally developed interstitials, promotions and commercials are reviewed for technical quality and ingested in the central pre-pro area for use by each of the

A key facility design concept was the creation of clusters of multichannel control rooms.

Whether the facility is originating live programming or static playback channels changes unpredictably, so each cluster is designed for quick shifting between four individual live channels, each with its own dedicated room and operator,

master control rooms. The telecommunications hub provides all of the fiber cabling interconnections in and out of the facility. The integrated communications lines include fiber and copper cable, microwave,

Design team

Rainbow Network Communications

- Steve Pontillo, senior vice president and general manager
- John Barbieri, vice president of engineering
- Mike Malozzi, manager of video engineering system design
- John McMahon, director of broadcast engineering

Communications Engineering (CEI)

- John Wesley Nash, executive vice president and COO
- Jim Conley, vice president of engineering
- Jeff Steele, senior project engineer
- Raef Alkhatat, project manager
- Jeff Harland, vice president of integration services
- John Tarsia, systems integration manager
- Don Brassell, senior systems support manager
- Ruber Huertas, senior systems support engineer

Equipment list

- Grass Valley Group routing systems
- Grass Valley Group M2100 master control switchers
- Grass Valley Group Profile XP servers
- Grass Valley Group Kalypso production switchers
- Louth automation systems
- RTS Intercom communications systems
- Tektronix test systems
- Chyron graphics and CG systems
- Sony monitors and VTRs
- Panasonic VTRs

