

Project Profile

Infinity Hits a Home Run at New Arizona Ballpark



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—Steve Grosvenor
President,
ATT Integrated
Technologies

Arizona's Bank One Ballpark will be the home of baseball's newest major league team, the Arizona Diamondbacks. The 25-story state-of-the-art stadium, situated on a 22-acre site in downtown Phoenix, is being designed and constructed on a fast-track schedule in time for opening day in April, 1998.

Andover Controls Representative, *ATT Integrated Technologies* of Phoenix, was selected by the Maricopa County Stadium District to install a fully integrated *Infinity* automation system in the new stadium. According to Steve Grosvenor, ATT's President, "The stadium was designed around the performance criteria of the Andover *Infinity* system, which will serve as the platform for the integration of several other specialized systems required at the Ballpark." The system combines HVAC, security, lighting, fire alarm, CCTV, and a retractable roof control system on a single network. The key to the successful and seamless integration of these separate systems was *Infinity's* support for a diversity of communications protocols, including Ethernet, TCP/IP, and BACnet, plus software interfaces to third-party equipment, such as Vicon™ brand CCTV and Simplex™ brand fire alarm systems.

The *Ballpark's* communications backbone supports both local and wide area networking capabilities. Six operator workstations and two file servers will process the vast amounts of information and alarms the stadium will generate daily. Fiber optics media was selected to facilitate the extreme high speed data transfer necessary to meet the throughput criteria specified.

Infinity will monitor and control the Ballpark's chilled water central plant, one of the largest in Arizona. The expected cooling load is 8,000 tons, served by seven York chillers and a Systecon™ package pumping system. Custom software interfaces will allow *Infinity* to *directly* communicate with this third-party equipment. *Infinity* will also control the HVAC air distribution system. Andover's *Plain English*® program sequences will perform flow sensing on the larger AHUs to achieve maximum airflow totaling 1.5 million cfm throughout the stadium.

The Ballpark is protected by a *Infinity* security and access control system, fully integrated with a high-speed Vicon CCTV system. An invalid door access will trigger one of 90 cameras located throughout the general bowl area to access a preset viewing point in less than 1 second. Future plans call for integration to the SX 8000 *EPISUITE*™ video badging package.

The entire stadium and common area lighting systems are also under *Infinity* control. Using the *Infinity* DCX 250 Touch Screen display located behind home plate, umpires will be able to adjust the light levels over the playing field before the game.

One very impressive area under *Infinity* control will be the stadium's dome-shaped retractable roof, composed of six telescoping panels. Driven by two 200-hp electric motors, it will take five minutes to open the roof, exposing approximately five acres of open sky. Using advanced control algorithms, *Infinity* will be programmed to position each section of the roof, providing sunlight to the grass field while avoiding heating the adjacent concrete seating areas that surround it. In addition, stadium officials will be able to close the roof during the summer months to cool the bowl area to an acceptable temperature before games. They estimate that it will take approximately four hours to cool the stadium from 110° to 80°F in mid-summer. Precise roof control using the *Infinity* system is critical; for although sunlight is necessary to keep the grass from dying, a heated thermal mass of concrete will delay the cooling of the bowl area. The *Infinity* system also controls the giant advertising panels that surround the stadium, rotating them vertically during game time for better air circulation and a more "open stadium" feel.

According to Steve Grosvenor, "An integrated systems approach has saved the owner approximately 15% on installation costs. These cost savings were obtained by the elimination of *redundant* communication infrastructures, microprocessor-based systems, and operator workstations that would normally be furnished with separate specialized systems. The added benefit of a single integrated system is that it requires less owner training in programming and system management. A single system means that stadium officials can use *one* programming language, Andover's *Plain English*, and a *common* user interface, the SX 8000 front-end software, to control the *entire* stadium."

ATT Integrated Technologies and Andover Controls provide Bank One Ballpark with its first "win"—a cost-effective, comfortable, and safe environment for the Arizona Diamondbacks and their fans.



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Andover Controls Corporation
World Headquarters
 300 Brickstone Square
 Andover, Massachusetts 01810 USA
 Tel: 978 470 0555 • Fax: 978 470 0946
<http://www.andovercontrols.com>

Andover Controls Ltd.
 Smisby Road
 Ashby-de-la-Zouch
 Leicestershire LE65 2UG England
 Tel: 01530 417733 • Fax: 01530 414225

Andover Controls GmbH
 Am Seerhein 8
 D-78467 Konstanz, Germany
 Tel: 07531 99370 • Fax: 07534 993710

Andover Controls S.A.
 Immeuble Dolomites 2
 58 Rue Roger Salengro
 94126 Fontenay Sous
 Bois Cedex, France
 Tel: 331 53 99 16 16 • Fax: 331 53 99 16 15

Andover Controls Asia
 Unit 1201-02, Phase I, Cheuk Nang Centre
 9 Hillwood Road, Tsim Sha Tsui East
 Kowloon, Hong Kong
 Tel: 852 2739 5497 • Fax: 852 2739 7350

Andover Controls Mexico
 Insurgentes Sur 1722-501
 Col. Florida
 Mexico D.F. 01030, Mexico
 Tel: 525 661 56 72 • Fax: 525 661 54 15

PROJECT AT A GLANCE:

Project Type:
 Integrated (HVAC, Security,
 Lighting, Dome Control)

Project Name:
 Bank One Ballpark

Location:
 Phoenix, Arizona

Market Segment:
 Sports/Entertainment

Number Of Buildings:
 1

Total Square Feet:
 1.26 million

Infinity Equipment Installed:
 6 – CX 9200 network controller
 6 – SX 8000 workstations
 3 – DCX 250 Touch Screen
 Displays
 2 – LSX 250 Service Tools
 Numerous Infinet controllers,
 including IDXs

Network:
 Fiber Optic LAN

Applications:
 Temperature and humidity control
 Access control
 Lighting control
 Retractable dome control
 CCTV
 Fire alarm
 Smoke control
 Video badging
 Security
 Intercom

Third-Party Equipment and/or Drivers:
 Simplex fire alarm system
 York chillers
 Systecon package pumping
 system
 Vicon CCTV
 EPISUITE badging package

Number of Controlled Doors:
 60-70

Number of Cardholders:
 500

Total System Points:
 7500

Andover Controls Representative:
 ATT Integrated Technologies