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*Dean Head
Director of Facilities
Moffitt Cancer Center*

PROJECT AT A GLANCE

- Project Type:
Integrated HVAC and Security
- Location: Tampa, Florida, USA
- Number of Buildings: 9
- Total Area:
1.5 million sq. ft. (139,355 m²)
- Applications:
 - Temperature and Humidity Control
 - Access Control
 - Digital CCTV
 - Tank Monitoring
 - Power Monitoring
 - Lighting Control
 - Water Monitoring/Irrigation
 - Smoke Control
 - Phoenix Fume Hood Monitoring
 - Paging
- Number of Controlled Doors: 110
- Number of Cardholders: 1,500
- Total System Points: 4,800
- Andover Continuum Equipment Installed:
 - 6 – Network Controllers
 - 11 – Network Controllers with I/O
 - 13 – Access Controllers
 - 185 – Local System Controllers
 - 249 – Local Terminal Controllers
 - 503 – Local VAV Controllers
 - 3 – Local Input Controllers
- Third-party Equipment and/or Drivers:
 - Edwards Fire Alarm System
 - York Chillers
 - Future:
 - VFD Driver
 - ASCII Communication Driver
 - Power Logic Driver
 - Lighting Driver
- Network: Ethernet TCP/IP
- TAC Partner: Roth Bros., Tampa

World-Renowned Cancer Research Center Chooses TAC[®]

The mission of the Moffitt Cancer Center in Tampa, Florida is simple: To contribute to the prevention and cure of cancer. Although this goal is not an easy one, Moffitt is leading the charge for the continued growth of cancer research.

It is no surprise then that Moffitt Cancer Center exemplifies technology on the cutting-edge, and that they chose a TAC facility management system for this world-renowned patient care and cancer research facility. The TAC system at Moffitt provides not just HVAC control, but security management, tank monitoring, parking control, and integration with a Digital Sentry DVXi CCTV system by Integral Technologies, TAC's digital video systems division.

The design, engineering, and installation of the first TAC system at Moffitt was done by local TAC Partner, Roth Bros. of Tampa, Florida. Roth continues to partner with Moffitt Cancer Center today, for retrofit projects, new installations, and new and creative applications of the TAC system.

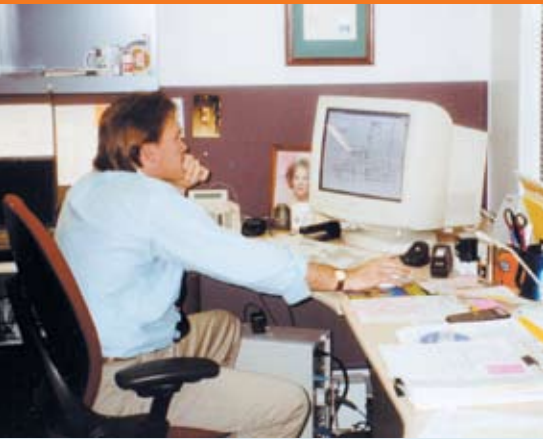
COMMITTED TO A CANCER-FREE FUTURE

The Moffitt Cancer Center, which opened in 1986 as a private, not-for-profit facility, was named for H. Lee Moffitt, former Speaker of the Florida House of Representatives, who was instrumental in the Center's creation. The facility is currently more than 1.5 million square feet (139,355m²) and growing.

The Center is licensed for 162 beds and serves more than 4,500 inpatients and 100,000 outpatients yearly. It is the only hospital in Florida designated by the National Cancer Institute as a comprehensive cancer center, joining an elite group of institutions dedicated solely to solving the problem of cancer. Located at the University of South Florida, Moffitt constitutes a growing component of the teaching and research activities of the USF College of Medicine.

The 1995 opening of the Moffitt Research Center, a 101,352 square foot (9,415 m²) facility located across the street from the Cancer Center, further advanced the Center's research mission by dramatically increasing the amount of laboratory space dedicated to exploring cancer. A 1999 expansion to this building included the addition of two





Dean Head working at the CyberStation

Moffitt Cancer Center

York 350-ton chillers controlled by TAC via an XDriver; and also an XDriver interface to the Edwards fire system, which provides information to the other buildings. TAC also controls the chill water flow, cooling tower operation, and works with the Phoenix control system and the Graham VSDs to supply air and exhaust air for the labs.

Moffitt's central energy plant came on line in early 2001. The plant currently has one York 900 ton variable speed chiller, three York 1100 ton electric chillers, and one York Y-Cat 850 ton diesel chiller controlled using a TAC XDriver. Three 1100 KW Catapiller generators are also monitored using an XDriver. In addition, the plant's three 400 hp Cleaver Brooks boilers are controlled and alarmed by the TAC system. Future plans will include a driver to monitor nine ASCO transfer switches.

The new Moffitt Clinic and Stabile Research Tower opened in late 2003, doubling the size of the existing research and outpatient clinical space and allowing the Center to better meet the growing demands of a state that has the second highest level of cancer.

THREE GENERATIONS OF TAC TECHNOLOGY

An Andover AC256 system, TAC's first-generation building control system, was installed at Moffitt during its construction in 1986. The system was upgraded to Andover Infinity™, TAC's second-generation system, in 1992. According to Ed Shelp, Project Engineer for Roth Bros., the TAC system at Moffitt was used strictly for temperature control at first. Card access control was added in 1993. Perimeter doors and doors leading to high-security areas, for example, the pharmacy and drug storage rooms, are controlled and monitored by the TAC system.

Moffitt Cancer Center, always looking for the newest technology, began installing TAC's third-generation product line, Andover Continuum™, in 1999. Eight CyberStations, Continuum's Windows® NT-based front-end workstation, network the entire Moffitt complex via an Ethernet LAN. Along with the main Cancer Center building, Continuum controls and monitors the entire Moffitt Research Center, Stabile Research Tower, Moffitt Clinic, and the central energy plant. In addition, two off-site buildings, The Lifetime Cancer Screening Center and The Moffitt Business Center, are monitored and controlled by Continuum.

CONTINUUM CONTROLS AND MONITORS VIVARIUM

Among the many critical areas at Moffitt that the Continuum system controls and monitors is the Vivarium, located in the Stabile Research Tower. Here important clinical drug studies will be carried out on 100,000 mice housed there. Environmental conditions in the mice rooms must meet stringent federal government guidelines so as not to sway research results. The mice are kept calm if temperatures, humidity, lighting, air pressure, and airflow are maintained within a specified range. Strict security and video monitoring of this area is also performed by the Continuum system.

WORK ORDERS INTEGRATION USING CONTINUUM

The Facilities Department at Moffitt Cancer Center plans to integrate the Continuum system with their CMMS (Computerized Maintenance Management System), Four Rivers TMS Pro for Healthcare®.

Dean Head, Director of Facilities at Moffitt, is excited about prospects this integration will bring to his department. "It will provide us tremendous labor-savings in terms of work orders and the never-ending clerical work they require. Integration between these two systems means that a Continuum alarm on a malfunctioning piece of equipment can automatically page a mechanic and send an e-mail to his hand-held device with the appropriate work order instructions to fix the problem. The endless typing of paper-based work orders can all but be eliminated!"



Moffitt Vivarium Procedure Room



Dean Head, Moffitt's Director of Facilities, inspects some TAC controllers

The Facilities Department also plans to link the preventative maintenance work orders generated by their CMMS to the Continuum system. By doing so, equipment maintenance can be done on a more accurate schedule based on actual equipment runtime usage versus calendar scheduling. "This ensures minimum equipment downtime for us while optimizing our maintenance budget," says Dean.

TANK MONITORING

As part of the on-going construction at Moffitt, two 10,000-gallon fuel tanks were installed and are used to fuel the Center's boilers. According to Shelp at Roth Bros., the Continuum system provides alarm monitoring of fuel levels, leak detection, and the stand-alone fuel filtration system. In addition, Continuum performs automatic fuel pumping from the

main tanks to the day tanks and controls the fuel oil pumps serving the generators and boilers.

MOFFITT MAKES THE SWITCH TO DIGITAL CCTV

Access control at Moffitt continues to grow. Currently, 110 card readers control access into the Cancer Center after hours and on high-security areas 24/7.

The old analog video recording system was replaced by an Integral Technologies' DVXi video system in 2001. There are currently 15 DVXs recording 11 PTZ and 203 fixed cameras throughout the facility, including the 800-car parking garage. The Moffitt security staff enjoys all of the benefits digital video has over analog —no more cumbersome and outdated VCR tape backups that sometimes take days to review. Another huge benefit is being able to monitor any camera from any workstation on the LAN. There are currently 24 Remote View clients spread throughout the facility.

CONTINUUM—LIMITED BY ONLY OUR IMAGINATIONS

"Our goal in using the Continuum system here at Moffitt is simple," states Dean. "We want to manage our equipment more efficiently and utilize our full-time employees more efficiently. Continuum allows us to do both. Continuum is Windows NT-based, so it easily integrates into our desktop applications. Continuum reports can be dropped into Excel spreadsheets and PowerPoint presentations, equipment work orders can be generated automatically, and alarms sent via Outlook e-mail. Any system on the market these days can start and stop equipment — they just aren't as flexible as Continuum. The integration between systems we receive with Continuum is truly what makes this system effective for us. Plus the fact that we have people here at Moffitt willing to 'push the envelope', so to speak ... we are limited on what Continuum can do for us by only our imaginations."



Moffitt Vivarium Tunnel Wash System



A CyberStation™ Chiller Status Screen

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