

# DETENTION | JAILS CORRECTIONAL SECURITY

CONSULTING • DESIGN • ENGINEERING SERVICES



STRATEGY + SPECIFICATIONS + TECHNOLOGY

# Firm Profile

Consulting | Design | Engineering Services



## Leaders In Design

Professional Systems Engineering, an NV5 Company, is a national leader in providing consulting, design, engineering, and construction services for justice, corrections, detention centers and jails. With hundreds of projects completed and \$5 billion in design currently underway nationally and worldwide, our client base of Owners, Architects, and Design-Build teams have counted on us to deliver detailed construction documents and specifications within budget and no change orders. We provide critical systems design, engineering, consulting services, and planning critically matched to operations in a safe and secure environment for security, life safety, communications, detention operations and lighting control.

## Client Focused Expertise

We offer state-of-the-art designs in perimeter fencing and detection, modern control centers, IP video surveillance, touch screen control systems, and wireless communications to maintain the highest levels of safety and security on each of our client's sites. We provide detention hardware specifications and schedules following ANSI 863-04 for detention security openings. By combining our design and hardware expertise, our firm is the only independent firm to specialize in providing specifications, drawings, and consulting in the fields of security, perimeter design, life safety, communications, and lighting for detention operations. Our firm provides our clients the decision making skills required to ensure a successful design, from understanding detention vs. corrections functions to behavioral needs. We offer a complete solution to design teams and owners.

Our firm is committed to providing the tools and building designs for our clients to function safely, securely, and successfully. We have the capability of providing emergency planning, policies, procedures, and training tailored to the individual needs of each client. This allows our team to work one-on-one with all involved parties to develop systems and practices that aid in the ultimate success of every project and every team.

## Innovative Leaders in Staffing, Procedures, and Training

Going beyond critical systems commissioning, our team prepares life safety plans, evacuation planning instructions, and detailed exit maps. For security we establish post orders and incident response procedures, master keying system design, and on-site training for security operations and evacuation exercises. Opening a \$100+ million facility requires a transition team with irrefutable experience. Our firm delivers solid recommendations and site specific practice manuals/training.



# Detention, Jails & Corrections

Professional Systems Engineering, an NV5 Company, has been providing justice operations, hardware consulting, fencing, detention applications, and safety of staff, visitors, and those in secure detention for over 35 years. Rarely does a firm integrate physical and electronic applications so seamlessly.

## Consulting, Analysis, and Design

- Master Planning
- Security Architecture
- United Nations Compliance
- Programming and Security Narratives
- Staff, Visitor, Inmate Workflow
- Reception/Intake Analysis and Recommendations
- Low, Medium, Maximum, Super-Max, Segregation, Forensic, Geriatric, and Isolation Design Experience
- Risk Analysis
- Threat Assessment
- Perimeter Security, Detection, and Response

## Hardware Consulting

- ASTM Grade 1-4 Detention
- UL Tool-Attack Resistance
- ANSI/BHMA 1-3
- Magnetic Locking
- Strikes/Bolts/Locks
- Hollow Metal Design
- Polycarbonate Evaluation
- Motorized Locking
- Secure Openings Consulting
- Electronic Controls
- Life Safety Operations

## Communications

- Intercom and Paging
- Nurse/Patient Communication
- Network Design
- Video Visitation
- Tele/Data Communications
- Master Television/MATV Distribution
- Satellite Reception/Distribution
- Trunked 800 MHz Public Safety
- WAN/LAN/WIFI DesignExhibit Presentation System Control

## Fencing/Perimeter Security

- Site Layout/Planning
- Perimeter Intrusion Detection Systems (PIDS)
- Chain Link/Mini Mesh/Custom
- Welded Mesh/318 Concertina
- High Performance Barriers
- Footer Design
- Seismic/EMF/Line/Optical Sensing
- Unique 'Capture Zone' Designs
- Physical Security Analysis
- Hard/Soft Secure Site Design
- Vehicle and Pedestrian Gates
- Site Video Surveillance

## Detention Control

- Industrial Grade Central and Distributed Processing Design
- Programmable Logic Control
- Mirror-Processing
- Redundant PLC Control
- Graphic Membrane Displays
- Operational Flow/Control Strategies
- Control Consoles, Cabinets, and Enclosures
- Custom Wood/Stainless Millwork

## Monitoring

- Touch Control Systems
- Voice Message Systems
- Video Surveillance/CCTV Systems
- Perimeter Security Systems
- Integrated Monitoring/Control
- Wireless Personal Alarms
- Wireless Tracking
- Watch Tour

## Life Safety

- I-3 Conditions for Institutional
- Shelter-in-Place
- Fiber Optic Fire Alarm
- Safety Program Development
- Redundant Cellular Site Monitoring

# High Security Correctional Facilities, Jails & Justice Facilities



## Security Solutions

Professional Systems Engineering, an NV5 Company, has over three decades of professional experience in providing consulting and engineering services for security, life safety, and communication systems. Our expertise is in security master plan development, comprehensive security surveys, risk and needs assessments, security operations and procedures evaluation and program development, systems design and engineering, as well as a full complement of services for individual system components.

## Balanced Programs

We offer a balanced team approach by combining the expertise of professionals representing physical hardware and systems, operations, policies, and procedures.

Our firm team is comprised of security management specialists, security risk experts and planners, communication specialists, engineers, and CAD designers. Backed with the resources of a multi-disciplined team, We provide our clients with well-coordinated security programs that fully integrate physical security hardware components with procedures and operational aspects.

## Consulting and Design Capabilities

By decreasing risk, increasing safety, preparing for emergencies, and planning for continuity of business, Our firm provides the continuity of management through design and maintenance that creates increased value and return-on-investment. We reduce operational losses, improve site security and safety, and mitigate potential risks from within the employee base or from outside infiltration. We create enterprise-wide strategic security, communication, and safety plans that incorporate our responsibility as a partner to provide valuable skill sets for well-coordinated successful programs.

## Risk Mitigation to Contingency Planning

Our staff includes individuals with highly technical skill sets, as well as executive security managerial capability. Experience includes a wide variety of markets and roles in detention, correctional, forensic, law enforcement, and institutional venues. We have experienced security managers, fire safety managers, on-line law enforcement experience, field electronics experience, network security, and communications experience including secure cyber protection, business continuity, and executive security management training.

# NYC DOC Rikers Island Correctional Facility - West Perimeter

 New York, NY



**\$15+ million**  
**perimeter project**  
**involving 6 miles**  
**of linear perimeter**  
**detection sensors**  
**and fencing was**  
**added to the west**  
**site with design**  
**documents prepared**  
**to New York City**  
**design standards.**

Professional Systems Engineering, an NV5 Company, provided correctional programming, space planning design, impact studies, threat/assault reduction, and PREA impact and served as the perimeter security, perimeter monitoring center, and site infrastructure design consultant on the \$6.8 million renovation for Rikers Island West Perimeter. Our firm's involvement with the Rikers Island started with an evaluation of the contract documents related to the previous perimeter security improvement project at the request of the NY DDC to determine if the equipment provided met contract requirements. As a result of our recommendations this initial project was expanded to include testing of the shaker devices currently used at Rikers Island and investigation of alternative perimeter security systems. The final west perimeter design includes a 1.8-mile perimeter, 1.8 miles of razor ribbon integrated detection system, with dozens of microwave zones, 1.8 miles of duct bank, 40 miles of cables, and 1500 feet of PVC coated rigid conduit.

## Services Provided

### Perimeter Security Electronics

- Zone layout
- Detection device mounting
- Fence detection systems
- Microwave approach systems
- Gate monitoring
- Alarm monitoring system

### Perimeter Fencing and Infrastructure

- Fencing system coordination
- Gate system coordination
- Razor ribbon/ barbed wire detection
- Dog run/ "No-Mans" Land treatment
- Ductbanks
- Alternative conduit systems

### Control Center

- Integrated multi-system alarm monitoring
- Ergonomic console layout
- Integration of new and existing equipment
- Graphical user interface (GUI) design
- System servers
- Security network
- Touch screen computers
- Report printers

### Systems Evaluation, Contract Evaluation and Systems Testing

- Contract documents review
- Contractor performance review
- Site survey
- Device testing
- Perimeter system investigation
- Migration planning

# SCI Phoenix

## Security, Communications, Life Safety & Technology Services

📍 Skippack, Pennsylvania



**SCI Phoenix East and West is a replacement project for one of the largest state correctional facilities. The expansion is the keystone to a major statewide rehabilitation and enlargement to handle a growing incarceration trend in Pennsylvania. Over \$40 million in systems were specified by our firm for the proposed \$431 million site allocation.**

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Professional Systems Engineering, an NV5 Company, served as the physical security, perimeter security, security electronics, detention hardware, technology, life safety, and communications consultant for the preparation of Bridging Documents through 2nd re-bid for the new \$350 million PA DGS SCI Phoenix. The facility was constructed in a design/build effort at the site of the existing SCI Graterford with a proposed capacity of 3,830-bed facility. There is a 1,915-bed, maximum-security prison; and a 1,915-bed, medium-security prison. The two male correctional facilities featuring one shared Administration/Centralized Service Building - Subdivides into two separate sections of the facility – “East” and “West” and share a secure perimeter and support services building, but have their own master control rooms and integrated security systems. There is also a new Female Transitional Unit which includes: An independently fenced, full-service building containing 192 dormitory-style beds. SCI Phoenix is a replacement project for one of the largest state correctional facilities.

Our firm also provided consulting services for the DGS DOC during the design-build phase to provide a performance specification for the video surveillance design to an IP-based system with redundant networking and infrastructure.

We assisted DOC and facility maintenance during the construction phase to provide consulting services for assessment and troubleshooting. This allowed for the systems startup and shakedown to be successfully completed for occupation of the facility.

### Services Provided

#### Physical Security

- Security zoning
- Impact/attack ratings
- Hardening analysis
- Control center design

#### Security Electronics

- PLC control systems
- Touchscreen control
- Digital video
- Intercom/paging
- Wireless duress
- Watch tour

#### Perimeter Security

- Security fencing
- Multiple detection systems
- Vehicle sallyport
- Site digital video
- Security lighting/controls

#### Detention Hardware

- Pneumatic locking system
- Swing door detention locks
- Sliding door detention locks
- Gate locks

#### Communications

- Data communications
- Voice communications
- Satellite TV distribution
- Inmate phone infrastructure
- Video conferencing

#### Life Safety

- Shelter-in-place scenarios
- IBC conditional use group IV
- NFPA life safety I-3 analysis
- Integration requirements

# Chester County Prison

## Security System Upgrades

West Chester, Pennsylvania



*The approximate 8-acre enclosed facility has interconnected structures ranging from the original 1959 prison to the latest addition.*

*Our firm has been engaged by The County to assess and design the direct replacement and upgrade of the PLC-based electronic security systems and perimeter intrusion detection system (PIDS).*

The Chester County Prison at 501 South Wawaset Road is an approximately 314,000 sq ft prison that has been open since 1959. The Prison was renovated in 1983, with expansions occurring in 1993 and again in 2004 to 2006 increasing the population to approximately 1,137. The approximate 8-acre enclosed facility has interconnected structures ranging from the original 1959 prison to the latest addition. Professional Systems Engineering, an NV5 Company, has been engaged by The County to assess and design the direct replacement and upgrade of the PLC based electronic security systems and perimeter intrusion detection system (PIDS).

Our firm provided assessment, consulting and design engineering services for the selection of PLC electronic security system upgrades and related equipment for the Chester County Prison. Our team designed for the following integrated security and operating systems: PLC and touch screen control, touch screen control system, video monitoring/integration, intercom/paging system, wired duress, and vehicle gate control.

Our firm is providing assessment, consulting and design engineering services for a new perimeter intrusion detection system that will be installed on the existing fencing at the facility's perimeter. This system will provide volumetric detection coverage at the vehicle sallyport gates and will be integrated with the facility's new video surveillance system. Our firm will also add additional razor wire to the fencing around the perimeter and integrate new intrusion detection systems with the existing electronic security systems, including Video Surveillance. The perimeter monitoring station will be located in Central Control, with a backup in the older control room.

### Services Provided

#### Security Systems

- Programmable Logic Controller (PLC) Door control systems upgrade
- Intercom/paging systems upgrade
- Access control systems upgrade
- New touchscreen workstations
- New master intercom stations
- Graphical User Interface (GUI) software update

#### Security Infrastructure

- Category-6 cabling
- Fiber optic cabling
- Patch panels
- Network switches
- UPS Replacement

### Control & Monitoring

- Integration to existing video surveillance systems
- Duress alarm monitoring
- UPS power status
- Lighting/power control
- Gate Control
- Alarm monitoring system
- Integration to existing video surveillance systems
- Integrated new intrusion detection systems with existing intrusion detection systems
- Integrated new intrusion detection system with existing Surveillance system
- UPS power backup
- Graphic display touchscreen

### Perimeter Security

- Perimeter Fencing
- Evaluation of PIDS for upgrade and replacement
- Zone layout
- Provided design services for electronic intrusion detection systems at the perimeter of the facility
- Multiple detection systems
- Security lighting/controls
- Gate monitoring

# PA DGS State Correctional Institutions Prime

Security Design & Engineering Consulting Services

📍 Pennsylvania



*Our firm provided services that encompass the replacement and upgrade of perimeter intrusion detection systems (PIDS), new fencing, and PLC/Video Surveillance integration at multiple Pennsylvania State Correctional Institutions.*

Professional Systems Engineering, an NV5 Company, provided engineering, design, consulting, and construction administration services that encompass the replacement and upgrade of perimeter intrusion detection systems (PIDS), new fencing, and PLC/Video Surveillance integration at multiple Pennsylvania State Correctional Institutions.

## SCI Facilities

- SCI Frackville
- SCI Greene
- SCI Mercer
- SCI Muncy
- SCI Retreat
- SCI Chester
- SCI Cambridge Springs
- SCi Laurel Highlands
- SCI Fayette
- SCI Cresson
- SCI Forest
- SCI Phoenix (Sub)

Our firm performed independent, unbiased evaluation and provided input regarding system selection for each site. Our team designed and engineered Perimeter Fencing, Fence Mounted PIDS, Taut Wire Intrusion Detection Systems (TWIDS), terrain following volumetric detection systems, buried detection systems, microwave volumetric systems, PLC and Video Surveillance Integration, monitoring and alarm systems, and mobile mapping.

We provided construction administration monitoring progress in the field, reviewed shop drawings and submittals, and ensured the Contract performed their work to the requirements of each project.

## Services Provided

### Perimeter Security

- Perimeter Fencing
- Evaluation of PIDS for upgrade and replacement
- Zone layout
- Provided design services for electronic intrusion detection systems at the perimeter of the facility
- Multiple detection systems
- Security lighting/controls
- Gate monitoring

### Control & Monitoring

- Alarm monitoring system
- Integration to existing video surveillance systems
- Integrated new intrusion detection systems with existing intrusion detection systems
- Integrated new intrusion detection system with existing
- Surveillance system
- UPS power backup
- Graphic display touchscreen

### Communications

- Universal cabling distribution system
- Inside/outside plant communication
- IP Video Integration Connectivity

# Trumbull County Adult Justice Center

## Security System Upgrade

📍 Warren, Ohio



*The control system that will be provided for the Trumbull County Adult Detention center will be non-proprietary, easy to maintain, off-the-shelf, control system that does not tie the Facility to a particular manufacturer. This allows flexibility and room for expanding and maintaining the system and should keep overall lifetime costs of the system down.*

Professional Systems Engineering, an NV5 Company, was engaged to provide for replacement and upgrades to existing control and jail technology systems at the Trumbull County Adult Detention Center. Our firm provided design, engineering, bid support, and construction administration services to deliver reliable, effective, and ergonomic jail technology systems upgrades. The control system that will be provided for the Trumbull County Adult Detention center will be non-proprietary, easy to maintain, off-the-shelf, control system that does not tie the Facility to a particular manufacturer. This allows flexibility and room for expanding and maintaining the system and should keep overall lifetime costs of the system down.

The Center is actually two detention facilities in one: The Minimum Security Jail (M.S.J.) and the Full Service Jail (F.S.J.). The entire building is a 180,000 SF facility housing approximately 314 inmates. Services for this facility requires the upgrade, replacement and integration of master control centers, local control stations, intercom and paging, duress, video surveillance, master clock and guard tour replacement.

### Services Provided

#### Control System

- Door and gates control/monitoring with PLC integration
- Cell control/monitoring
- Redundant monitoring stations
- Touchscreen control system in each housing unit
- Touchscreen control in each master control for emergency take-over
- Redundant programmable logic controller (PLC) systems
- Self-healing fiber optic network
- New security intercom and paging head-end system
- Housing unit console replacement
- UPS back up for equipment

#### Detention Hardware and Openings

- Replacement of malfunctioning electro-mechanical locks
- New electro-mechanical locks
- Detail hardware evaluation, coordination, and specifications
- Replacement of detention doors and frames where required

#### Video Surveillance

- IP upgrade and integration

# Travis County Correctional Center & Jail

## Security Control Systems Upgrades & Renovation

 Austin, Texas



*Our firm, having vast engineering experience in smoke detection, smoke control systems, and life safety code requirements (national, state, and local requirements), was selected by the Sheriff's Office of Travis County.*

*We provided design and engineering services to deliver cutting edge results on which all future control system work throughout Travis County is now being based.*

Professional Systems Engineering, an NV5 Company, was engaged by Travis County to provide for replacement and upgrades to existing control systems and detention hardware several housing facilities at the Travis County Correctional Complex and Jail. Our firm provided design and engineering services to deliver cutting edge results on which all future control system work throughout Travis County is now being based.

These projects included multiple facilities housing maximum security male and female inmates and medium security male inmates. Services for these multiple facilities required the upgrade and replacement of three master control centers, eleven local control stations, intercom and paging systems, and detention hardware. Our design services enabled the Travis County to save over \$200,000 and receive state-of-the-art control system that are non-proprietary, easy to maintain, and provided a safe and secure environment at each facility.

### Services Provided

#### Control System

- Door and gates control/monitoring with PLC integration
- Cell control/monitoring
- Redundant monitoring stations
- Touchscreen control system in each housing unit
- Touchscreen control in each master control for emergency take-over
- Redundant programmable logic controller (PLC) systems
- Self-healing fiber optic network
- New security intercom and paging head-end system
- Housing unit console replacement
- UPS back up for equipment

#### Detention Hardware and Openings

- Replacement of malfunctioning electro-mechanical locks
- New electro-mechanical locks
- Detail hardware evaluation, coordination, and specifications
- Replacement and repair of existing detention openings and sliding devices

#### Video Surveillance

- IP upgrade and integration

# Cape May County Correctional Facility

## Security & Communications

📍 Cape May County, New Jersey



*This new facility has become the Command Center for county-wide security operations to act independently from the jail command center. The dual purpose of the facility is further defined by requiring two (2) separate command centers. One is dedicated to the correctional facility and the other serves the county wide security operations.*

Professional Systems Engineering, an NV5 Company, provided design, engineering, and consulting services for security and communications. The new \$37 million, 85,000 SF facility houses 450 inmates includes both male and female. This new facility has become the Command Center for county-wide security operations to act independently from the jail command center. The dual purpose of the facility is further defined by requiring two (2) separate command centers. One is dedicated to the correctional facility and the other serves the county wide security operations. The building includes a courtroom, infirmary, receiving, processing, inmate storage, day rooms, dormitories, holding areas, sallyport, laundry room, kitchen, command center, visitor stations, and other secure correctional facility areas. The building houses the County Sheriff Administration functions to include offices, meeting room, multi-purpose room, employee gym, staff dining/break rooms, locker rooms, IT rooms, and storage areas.

### Services Provided

#### Security

- Access control
- CCTV
- Network video recorder
- Visitor screening
- Security intercom
- Duress alarm
- Detention area controls
- Wireless Duress or watch tour
- Perimeter security

#### Central Control

- Door control/monitoring of security doors and gates
- Room control/monitoring
- Redundant monitoring stations
- Programmable Logic Control (PLC)
- Graphical User Interface (GUI)
- Access control

#### Data/Telecommunications

- Telephone
- Data network
- Structured cabling system

#### Audio-Visual/Communications

- Training A/V with projector & sound
- Inmate televisions
- Paging
- Intercom

# Fort Peck Detention Center

## Correctional Security & Tele/Data Infrastructure Design

📍 Poplar, Montana



***Our firm's correctional security designs provide a complement of systems that work together to help ensure security and safety for inmates and correctional staff. The synergy of various electronic and physical security measures provides the highest level of security possible within the requirements and budgetary constraints of each individual facility. Fort Peck's new detention center constitutes a vast improvement over the previous lock-and-key facility.***

Professional Systems Engineering, an NV5 Company, correctional security designs provide a complement of systems that work together to help ensure security and safety for inmates and correctional staff. The synergy of various electronic and physical security measures provides the highest level of security possible within the requirements and budgetary constraints of each individual facility. Fort Peck's new detention center constitutes a vast improvement over the previous lock-and-key facility.

Our firm provided design and consulting services for the design and construction of a new, \$14 million detention center for the Fort Peck Tribes in Poplar, Montana. We designed the electronic security systems including IP video surveillance, intercom, paging, staff duress, perimeter intrusion detection, and access control. These systems were integrated for streamlined control from touchscreen control workstations. Physical security was also included in our firm's design, encompassing fencing and detention hardware. We also designed the tele/data infrastructure for the facility's enterprise IT network and phone system, including telecom room layouts and structured cabling systems. Design was formulated to work in conjunction with the facility's architecture and geographical location to

### Services Provided

#### Electronic Security

- IP video surveillance
- Perimeter intrusion detection
- Intercom
- Paging
- Access control
- Central control room design
- Systems integration and touchscreen control

#### Physical Security

- Perimeter fencing
- Gates
- Detention locks
- Detention door hardware
- Door monitoring

#### Tele/Data Infrastructure

- Equipment room (MDF/IDF) layouts
- Electrical and heat loads
- Structured cabling and conduit
- Network switches and other hardware

# Communication Technologies

Professional Systems Engineering, an NV5 Company, has extensive experience providing complete Tele/Datacom infrastructure and information technology systems planning, design and engineering services. With over 35 years of procurement support services, we have developed RFP's in communications reflecting over \$20 million in purchases, installation and deployment -- all on schedule.

## Wireless Data/Voice Systems

- Wi-Fi
- WiMAX
- Cellular Data
- Microwave Systems
- 700/800/900 MHz

## Wireless Network Applications

- Mesh Networks
- Point-to-Point
- Wireless Backhaul
- Wireless LAN/WAN
- Hot Spots
- Wireless Network Infrastructure Planning

## Wireless Network Equipment

- Autonomous Access Points
- Lightweight Access Points
- Wireless Network Switching
- Wireless Network Management
- Wireless Network Security Data

## Data Network Types

- LAN
- WAN/MAN
- High-rise Networks
- Multi-Building Campus Networks

## Network Communication Applications

- VoIP
- Unified Messaging
- Video Conferencing
- Video Delivery and Storage
- VPN

## Network Integrated Building Security

- IP CCTV Systems
- IP Intercom Systems
- Networked Access Control Systems
- Network Integrated Building Security

## Infrastructure Planning

- Structured Cabling
- Campus Wide Infrastructure
- City/County Wide Infrastructure
- Wireless Backhaul
- Aerial Cabling Systems
- Ductbank Systems

## Telecom Service Planning

- POTS
- ATM
- T-Carrier
- DSL
- ISDN
- Cable Modem
- Multi-Tenant VoIP

## Data Centers

- Storage Networking
- Data Back-up Systems
- Critical Power Systems
- Network Monitoring
- Server Consolidation
- VLAN Coordination
- Legacy Systems Migration
- Virtualization of Servers

# Chatham County Detention Center

## Security & Telecommunications

📍 Savannah, Georgia



*The Chatham County Detention Center expansion project added total number of inmate beds to 2,360 and added 400,000 SF to the facility. Our firm provided security and telecom consulting and construction administration services for this project.*

Professional Systems Engineering, an NV5 Company, provided security and telecommunication consulting and construction administration services for the Chatham County Detention Center. The expansion project added 400,000 SF and bring the total number of inmate beds to 2,360. Major renovations include the administration building, medical, kitchen, laundry and warehouse facilities. A work-release center is planned along with further renovation which will accommodate the need for any possible future expansions.

Throughout, our firm has provided construction administration services to ensure the facilities new electronic security systems, perimeter intrusion detection systems (PIDS), perimeter fencing, and tele/data communications systems worked and had been installed as designed. The second phase which included Unit 5, we designed an expansion to the newly upgraded electronic security systems, PIDS, perimeter fencing, and tele/data systems.

This project ultimately provided improved inmate screening through the use of hands-off sterile screening processes, over 900 video surveillance cameras, 767 card readers, complete integrated door control and monitoring from Central and Local Control areas, and improved security communications throughout the building, and a new perimeter fence including multiple layers of perimeter intrusion detection systems.

### Services Provided

#### Security/Enforcement

- Door and gates control/monitoring with PLC integration
- Cell control/monitoring
- Redundant monitoring stations for central control, support/command personnel and housing unit stations
- Complete security intercom and paging system
- CCTV surveillance
- Access control systems
- Wireless/wired duress systems
- Digital video recorder equipment and networked video servers
- Perimeter security and fencing

#### Communications

- Communications infrastructure
- Main point of presence coordination
- Wide area of network interface
- Distribution backbone design
- Consulting for switching and servers
- IDF/MDF tele/data room equipment layout
- Tele/data communications structured cabling system
- MATV/CATV system
- Video visitation

# Merrimack County House of Corrections

## Security & Communications Systems Design

📍 Boscawen, New Hampshire



*The Merrimack County House of Corrections project consisted of 240 beds and 80,000 SF of new construction, plus 20,000 SF of renovations, for a total of \$25 million in construction. It was a Design Build project completed on time and within budget, resulting in a state-of-the-art county jail.*

The Merrimack County House of Corrections project consisted of 240 beds and 80,000 SF of new construction, plus 20,000 SF of renovations, for a total of \$25 million in construction. It was a Design Build project completed on time and within budget, resulting in a state-of-the-art county jail.

Professional Systems Engineering, an NV5 Company, as part of the Owner's team, provided RFP documents to establish quality guidelines, design and program data, operational narratives and space program input/room data schedule coordination for Merrimack County New House of Corrections.

### Services Provided

#### Security Systems

- Central control room design and console design
- Security equipment room layout and rack requirements
- Door, gate control system requirements through PLC/graphical user interface computer system
- Miscellaneous control requirements including inmate telephone, lighting, and utilities control
- Video surveillance system requirements, including digital video recording
- Intercom/paging fully integrated with control video surveillance, access control system
- Wired/wireless duress system requirements

#### Telephone and Data Communication System

- Telecommunication digital PBX system
- Infrastructure for tele/data/fax/video distribution system
- Telephone instruments
- Coordination for Virtual Private Network (VPN)
- All data switches and hubs networked to Owner's T-1 channel bank
- Video visitation/conferencing system
- Video arraignment
- Inmate telephone system coordination
- UPS coordination

# Van Cise-Simonet Detention Center

Security and Communication Design & Consulting

📍 Denver, Colorado



***The new The Van Cise-Simonet Detention Center serves pre-sentenced inmates remanded to custody by the courts. Our firm provided security and communication design and consulting services for the new four-story, 461,000 SF, \$160 million facility with a 1,500 bed capacity. The Van Cise-Simonet Detention Center achieved LEED Silver certification.***

Professional Systems Engineering, an NV5 Company, provided security control system design and consulting services for this new state-of-the-art detention center project. The security system for the detention center will be comprised of control and monitoring of inmate movement, doors and gates, video, intercom and paging, duress, lighting, and other functions as required by the institution. Our firm's responsibilities included planning, design, and ushering in standards of practice relating to the state-of-the-art detention facility's control and security system. Our services included design and consulting on the following systems:

- Control systems including the interface computers and programmable logic control system graphical user interface for floor control, housing units, intake/booking, medical, and central courthouse holding
- Control system design consisting of multi-tier design of network PLC and touchscreen work station computers for local and floor controls networked to multi-generator central control system-based ground dual-core Raid servers
- Graphical User Interface (GUI) touch screen designs
- IP video surveillance system design including recording, virtual switching, network storage arrays, and analytics
- CCTV, intercom/paging, and control systems
- Design and construction documentation including system and integration diagrams, GUI screens, console layouts, and selected specification sections
- Operational sequence documents for all computer systems
- The new The Van Cise-Simonet Detention Center serves pre-sentenced inmates remanded to custody by the courts. Our firm provided security and communication design and consulting services for the new four-story, 461,000 SF, \$160 million facility with a 1,500 bed capacity. The Van Cise-Simonet Detention Center achieved LEED Silver certification.

# Fayette County Prison

## Security Design

Uniontown, Pennsylvania



*The project is a new state-of-the-art, four-story building of approximately 114,000 sq ft on an 8-acre site with 318 beds. The construction budget is approximately \$51.7 million.*

*Fayette County, Uniontown, PA - New Jail / 112,250 SF / \$51,700,000 / Est. Completion March 2023; move-in by May 2023*

Professional Systems Engineering, an NV5 Company, provided design, bidding, and construction administration services for security systems, detention door hardware, and audio/visual systems. Fayette County Jail, which was originally built in 1892 with additions constructed in 1999, was in great need of replacement and upgrades due to aging facilities and overcrowding. A new, modern four-story building with two floors and mezzanines, spanning about 114,000 sq ft and accommodating 330 beds, is being constructed on an 8-acre site. The total construction budget was approximately \$51.7 million.

There is space for programming and treatment to aid in inmate rehabilitation. Additionally, there is a replica cell for in-house corrections officer training. The design incorporates sustainable features, and there is potential for future expansion with an additional 68 cells and 132 beds. The County Jail will be presented at a blue-ribbon ceremony.

### Services Provided

#### Security Electronics

- PLC door control
- Card access control system
- Monitoring and control stations
- Graphical User Interface
- Video surveillance system integration
- Security Intercom
- Paging
- Staff duress
- Watch tour
- Vehicle sallyport

#### Detention Door Hardware

- Locks and latches
- Hinges
- Lock cylinders
- Keys
- Operating Trim
- Closers
- Floor stops

#### Audio-Visual/Communications

- Audio visual infrastructure, video conferencing rooms, arraignment rooms, visitation areas
- Audio visual presentation systems for conference and training rooms

# Bayside State Prison

Correctional Security Design &  
Project Management Services

📍 New Jersey



*A more secure and dependable system was required to minimize the possibility of a security breach, or escape while improving correctional officer safety. Our firm was selected over a field of nine qualified firms for outstanding experience in renovations for justice facilities.*

Professional Systems Engineering, an NV5 Company, provided expert security and electrical design services for the removal and replacement of 40-year old cell doors, locks, and cell locking systems in Housing Units A-F at Bayside State Prison (total of 504 cells.)

Special phasing requirements and lead-based paint abatement procedures were implemented to minimize the effect the renovations had on prison operations. Our firm performed all surveying and documentation of existing conditions, consulting, design, cost estimating, construction administration, commissioning, and close-out services.

## Services Provided

### Locking System Replacement

- Replacement of existing hollow-metal steel sliders
- Replacement of existing cover box system
- New full travel pneumatic door locking
- Pneumatic emergency release system
- Compressed air system including compressors, storage, tanks, manifolds, rigid and flexible piping

### Control System

- Touchscreen control system in each housing unit
- Touchscreen control in central control for emergency take-over
- Redundant programmable logic controller (PLC) systems
- Self healing fiber optic network
- Housing unit console replacement
- Secure console enclosure for correctional officer protection during operations
- UPS back up for equipment

### Project Management Services

- Bi-weekly construction meetings
- Reviewed all contractor submittal and schedules
- Reviewed all contractor invoices and change-order request
- Commissioning of contractor

# NYC DOC Rikers Island & Borough Facilities

## Security Video Surveillance System

📍 New York, NY



***Our firm acted as the security specialist for Video Surveillance Systems from the Facility Survey phase through development of Bid Documents and Design Modifications including the construction and commissioning phases of the project as requested. We also provided coordination of all efforts related to the Video Surveillance Systems.***

Professional Systems Engineering, an NV5 Company, acted as the security specialist for Video Surveillance Systems from the Facility Survey phase through development of Bid Documents and Design Modifications including the construction and commissioning phases of the project as requested. Our firm also provided coordination of all efforts related to the Video Surveillance Systems.

Our firm provided survey, design, and construction administration services for Video Surveillance system upgrades to seven (7) existing NYC DOC facilities, including:

- Otis Bantum Correctional Center (OBCC)
- Eric M. Taylor Center (EMTC)
- Rose M. Singer Center (RMSC)
- North Infirmery Command (NIC)
- Manhattan Detention Complex (MDC)
- Vernon C. Bain Center (VCBC)
- Brooklyn Detention Complex (BKDC)

We performed a complete survey of all existing facilities to evaluate existing conditions and location new camera, equipment, and monitoring locations prior to the design of new camera locations and other system upgrades. The project will result in the installation of more than 7,700 new cameras.

### Services Provided

#### Video Surveillance System

- Internet protocol (IP) cameras
- Fixed and PTZ cameras
- Interior and exterior camera coverage
- Network Requirements
- Equipment room requirements
- Coordination of power requirements
- Monitoring locations

# Life & Property Safety

Professional Systems Engineering, an NV5 Company, provides a wide range of services for life safety and property protection including consulting, engineering, system design, construction administration, inspections and testing, and other related services. Our firm designs fire and life safety systems that protect our clients from loss from fire, security issues, and other emergency situations.

## Code Compliance/Evaluation

- IBC Architectural Evaluation
- Building Fire Code Analysis
- Fire and Life Safety Analysis
- JCAHO Standards Compliance Including Statement of Conditions
- Life Safety Plans
- Intellectual Property and Patent Claims
- Product Proof-of-Performance Evaluations and Claim Management

## Life Safety

- High-Rise Compliance
- Fire Alarm
- Mass Evacuation
- Biological Hazards
- Chemical Agents
- Command Centers
- Stair Pressurization
- Smoke Containment
- Smoke Evacuation
- Smoke Detection
- Addressable Monitoring
- Evacuation Plans
- Brigade Manuals
- Commissioning and Testing

## Alarm/Evacuation

- Audio Evacuation
- Wireless Mass Notification
- Bio/Chem Hazard
- LEL/LFL Alarms
- Nuclear Alert
- Audio Messaging
- Pager Integration
- Synthesized Response

## Detection Systems

- Pharma and Electronics Fabrication
- Process Gas/Detection and Alarm Systems
- Bio/Chemical Introduction
- Organic/Inorganic Gases
- Smoke/Heat/Fire/Incipient
- Explosion Inerting

## Fire Protection

- Wet Sprinkler
- Dry Sprinkler
- Standpipes
- Fire Pumps
- "Green" Inerting Gases
- Carbon Dioxide
- Purge Control
- Pre-Action/Single and Double Interlock
- Deluge

## Systems Management

- Systems Integration
- Egress Plans Production
- Proprietary Monitoring
- Radio Control/Transmission
- Dispatch/Control Center
- Door Control
- Digital CCTV
- Card Access
- Environmental Monitoring
- Intrusion Detection
- Hardware Compliance
- Correctional Systems
- Parking Controls
- Fencing Systems
- Motion Detection
- Elevator Control
- Systems Testing

