PSE PROFESSIONAL SYSTEMS ENGINEERING AN NV5 COMPANY

COLLABORATIVE DESIGN SERVICES FOR A/V INTEGRATION

AUDIO • VISUAL • VIDEO • TECHNOLOGY

STRATEGY + SPECIFICATIONS + TECHNOLOGY

PROFESSIONAL SYSTEMS ENGINEERING, AN NV5 COMPANY 1-800-839-5060 WWW.PROFSYSENG.COM

Firm Profile

Enterprise Wide Communication Solutions

Professional Systems Engineering, an NV5 Company, principle objective is to become a partner in the development of enterprise level sound, video, lighting, and performance venue designs for corporate, educational, conference, and agency environments to strategize on technology while collaborating on its implementation. Our skill sets include acoustical, A/V, and digital media distribution consultants, and engineers. Our staff includes certified network design engineers and architects, data center design architects, RF/ fiber/IP infrastructure and communications engineers. We provide end-to-end project management while trained staff includes experts in acoustics, noise and vibration control.

Converging Technologies

The convergence of these technologies requires a firm with a wide diversity of talent, as well as a deep level of experience to provide targeted specifications, reports, contract documents, and studies to create a sustainable A/V and communications platform across all corporate, education, and agency levels.

Expanding A/V Communication Environments

The expanding A/V communication environment needs to be continuously addressed. The continuous uprooting of bandwidth by networks and higher technologies on platforms as diverse as Audio Video Bridging (AVB), AES67, Dante, Q-LAN, NDI, multicast video, IPTV and newer communication protocols and methods requires meeting a challenge that is a moving target. Centralizing your consulting and design capabilities by deploying our technical and project management staff provides cost efficiencies and tangible benefits directly to the bottom line.

Audio/Visual/Video/ Signage/Acoustics

Professional Systems Engineering, an NV5 Company, integrates sophisticated electronic systems designed to work together in a practical, reliable manner. A necessity by design, integration is mandatory in today's digital workplace.

Audio/Visual/Video

- High-Definition (4K) video/AVB
- Streaming/Digital On-Demand
- Touch Control
- Sound Reinforcement
- Theatrical Performance Audio
- Video Projection
- Computer Graphics
- Exhibition/Multi-room Sound
- Audio/Video Teleconferencing

Acoustics

- Architectural Acoustics
- Sound Transmission Loss
- Reverberation Analysis
- Performance/Theater Acoustics
- Noise Control
- Vibration Control
- Sound Shaping
- Sound Spectrum Analysis

Networked A/V and Conferencing

- IPTV - Dedicated TV Net
- AVB - Audio/Video Bridging
- COBRA.net® Platform
- Q-SYS® Platform
- DMX Control
- Presence® Rooms
- Huddle Rooms
- HD Share Rooms
- Zoom® Rooms
- Lutron® Integration

Digital Signage

- Interior Design Integration
- MUFIDS
- Programmed Replay
- Live High Definition Distribution
- Exterior Design/Integration

Communications

- VoIP/Network Engineering
- Secure Wireless
- Audio Distribution
- Video Distribution
- RF Distribution
- Video Conferencing
- Telecommunications
- Data Communications
- Microwave Communications
- Wide Band Communication Systems
- Fiber Optics/Broadcasting
- Digital Distance Learning
- Satellite Feed/Distribution

A/V Automation

- BAS/Water Feature/Pool Integration
- Sound/Audio/Visual/Satellite/Radio/Cable Control
- Wireless Touch Panels
- Custom Touch Panels
- Custom Video Walls
- 1-Button Conferencing

Justice for All: Courts and the Community Learning Center

A/V Technology

Manhattan, NY

Our firm has had over two dozen courthouse assignments including District Courts Programs to Justice for All: Courts and the Community Learning Center projects in the District of Columbia, Pennsylvania, New Jersey, and Maryland, our certified and licensed staff manages acoustics, noise, vibration control, audio/visual/video, and court and conferencing technologies with great network and controls fluency.

Professional Systems Engineering, an NV5 Company, provided design and consulting services for audio, video, presentation, and visitor enabled digital exhibit technology for Justice for All: Courts and the Community Learning Center in Manhattan. The Courts and the Community Learning Center renovation project included converting an existing library space into a new, high-tech learning center at the existing courthouse building.

Our work included customized A/V systems which tightly integrated into custom DIRTT wall architecture for truly impressive appearance and functionality. Our certified and licensed staff managed acoustics, noise, vibration control, audio/visual/video, and court technologies with great network and controls fluency. The project included design of infrastructure and equipment required to support advanced features such as A/V display and presentation, video conferencing, teleconferencing, digital exhibits, and video wall control.

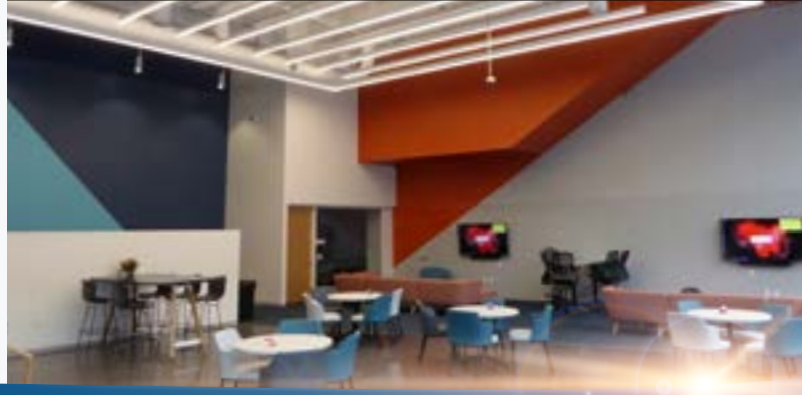
A/V Technology

- Video wall for presentations, large displays, and conferencing
- A/V source presentation systems through wireless touch panels
- Acoustical analysis and modeling
- Touch interactive digital exhibits for visitor enabled control
- Configurable multi-zone use for simultaneous control
- Touchscreen A/V control system
- Digital matrix audio mixing system
- Assisted Listening systems for Americans with Disabilities Act (ADA)
- Four interactive touch panels for education
- Full interactive station for enhanced instructional sessions
- Classroom/conference room with user video conferencing

Quorum Conference Center for UCSC

Audio Visual Technology

Philadelphia, PA



The University City Science Center (UCSC) is the first and largest urban research park in the United States. It provides laboratories, offices, classrooms, and conference spaces that nurture and sustain new technology development.

Professional Systems Engineering, an NV5 Company, provided audio/video (A/V) consulting, design, and construction observation services for a newly constructed 14-story, 340,000 SF building. The building is home to multiple different entities, so the A/V designs in each area were tailored to the needs of the associated user group.

Quorum – Drop-in lounges, signature programs, and event spaces. Our designs for these areas included:

- A large, 300-person lecture hall which can be divided in half for simultaneous dual-use. Full presentation systems are provided, including large laser video projectors, ceiling speakers, presenter inputs, touch screen control panels, touch screen annotation monitors, video conferencing camera, and ability to integrate with BYOD devices for webcasting or web video conferencing.
- Two approximately 20-person meeting rooms. Presentation systems were provided, including large flat panel displays, ceiling speakers, presenter inputs, touch screen control panels, video conferencing camera, and ability to integrate with BYOD devices for webcasting or web video conferencing. These rooms also have the ability to see and hear the lecture halls for use as overflow spaces.
- Multiple small conference and meeting spaces. Presentation systems were provided, including large flat panel displays, sound bar speakers, presenter inputs, and the ability to see and hear the lecture halls for use as overflow spaces.
- First and second floor lounges and pre-function areas which can be used for networking events and/or waiting areas for the lecture halls and conference rooms. Audio systems were provided for background music, announcements, or audio from the lecture halls for use as overflow spaces.

First Hand Labs – science classrooms/labs for children. Our designs for these areas included:

- Four classroom/lab spaces for approximately 16 students each. Each includes a large flat panel display or projection screen, sound bar speaker or ceiling speakers, and teacher inputs.

Science Center – corporate offices for the UCSC. Our designs for these areas included:

- One 14-person executive conference room. This area included a large flat panel display, ceiling speakers, and presenter inputs.
- One 8-person conference room. This area included a large flat panel display, sound bar speaker, and presenter inputs.
- One reception area. This area included a large flat panel display with local inputs for welcome messages, cable television, and digital signage.
- One kitchen/break room. This area included a large flat panel display with local inputs for cable television and digital signage

Court Administrative Building and Conference Center IP Networked A/V Conferencing

A/V Technology

Washington, DC

Our firm has had over two dozen courthouse assignments including District Courts Programs to Justice for All: Courts and the Community Learning Center projects in the District of Columbia, Pennsylvania, New Jersey, and Maryland, our certified and licensed staff manages acoustics, noise, vibration control, audio/visual/video, and court and conferencing technologies with great network and controls fluency.

Professional Systems Engineering, an NV5 Company, provided consulting services for audio/video, presentation, and conferencing technologies.The Court Administrative Building and Conference Center administration offices for A/V upgrades project included existing meeting and conference rooms ranging from smaller 6 to 10 person meeting rooms, to larger 24+ person executive conference rooms as well as a large divisible conference center for 100+ attendees.

Particular emphasis was placed on working closely with multiple different use groups and agencies to upgrade the A/V technologies and experiences in the rooms to be highly efficient and flexible while maintaining ease of use.

The project includes the infrastructure, network requirements, and A/V equipment required to support advanced features such as A/V display and presentation, teleconferencing, video conferencing, and collaboration. A critical goal is to off load typical hardware intensive A/V support staff to an IP based support platform with greater software A/V capabilities while providing virtual support.

A/V Technology

- Monitor, projector, and/or video wall large format displays tailored to the needs for each room
- A/V Evidence presentation systems
- Acoustical analysis
- Flexible and configurable multi-zone and multi-layout use
- Touch screen A/V control systems
- Digital matrix audio mixing systems and local amplification
- Assistive Listening Systems (ALS) for ADA compliance
- Network-based audio and video transmission and management for efficient centralized processing and maximal flexibility

Our firm has had over two dozen assignments through the Federal Administrative Office of the U.S. Courts. From the Justice for All: Courts and the Community Learning Center in Manhattan to Federal Courts programs and projects in the District of Columbia, Pennsylvania, New Jersey, and Maryland, our certified and licensed staff manages acoustics, noise, vibration control, audio/visual/video, and court and conferencing technologies with great network and controls fluency.

Temple University

Educational Technologies for Classroom Laboratory Building

Philadelphia, PA

This $25 million classroom expansion included advanced infrastructure serving data, telecom, voice, music, and video media transmission. Our hybrid solution served special music instruction, computer labs, math labs, media centers, and extensive remote electronic library access.

Professional Systems Engineering, an NV5 Company, provided educational technologies programmatic, schematic, and design drawings for this multi-media project. Our firm provided multi-media teaching consulting for programmatic and design stages. Included were network and educational technology systems designed for transparent use of computers in all classrooms and auditoriums.

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The use of the computer is transparent in the sense that computers are located in a central Media Center and not in each classroom or in the auditoriums. The Central Media Center also included complete controllable and scalable input for multiple video, audio, network, and internet sources. Six computer labs plus capabilities for computers in every classroom and at every student station were provided within the project.

Also included were acoustics, noise and vibration control, architectural acoustical finish programming, audio/visual/video systems, sound reinforcement systems, and distributed electronic bulletin board systems.

The Perelman classroom building, as it is now called, reflects quiet permanence whose planning and design complements the vigorous training today's student needs.

Services Provided

Services

- Instructional technologies specification
- Schematics through final design
- Noise/vibration control
- Auditorium design
- Multi-media central resource center
- Video/audio/computer distribution
- Computer networking
- Classroom planning
- Program management

Designs

- Acoustics
- Noise and vibration control
- Instructional program input
- Multiple computer lab designs
- Critical acoustics for all classrooms
- Critical infrastructure

Philadelphia Family Court

A/V Design Services

Philadelphia, PA

There was a much-needed upgrade to the facility of the Domestic Relations Courts. The new facility can meet the appropriate level of services, safety protection, and specific sensitive family cases.

The new Philadelphia Family Court building is a sprawling 14-story, 510,0000 square foot structure located in Center City. The $160 million facility now centrally combines two related court service operations of the First Judicial District (FJD), Philadelphia's court system, once housed separately: Domestic Relations and Juvenile divisions.

Professional Systems Engineering designed a floor of the Family Courthouse, including 5 of the courtrooms. Our design services contributed to the much-needed transformation and upgrade of the courtroom technologies. The quality of design and integrated courtroom technologies reflected the importance of the cases presented in the courtrooms.

- Microphones at each position for local voice lift as well as integration for recording, teleconferencing, and video conferencing
- Centralized amplifiers and speakers distributed throughout each courtroom for even audio coverage for all intended listeners
- Infrared assistive listening systems for inclusion of the hearing-impaired and ADA compliance
- Digital video switching system for input of video sources and selectable display on large projection screen as well as tabletop monitors
- CD projectors on motorized ceiling lifts and motorized projection screens for large-format video displays that disappear when not in use
- Touch screen A/V control system with custom graphical user interface for controlling all user-accessible functions of the A/V systems as well as integration with the lighting system
- Hardware codec and multiple cameras per courtroom for video conferencing
- Telephone conferencing bridges for audio teleconferencing utilizing the distributed microphones and speakers
- Annotation processors and touchscreen annotation monitors for real-time video annotation
- CobraNet network-based paging system for area-based public announcements in waiting areas and hallways as well as integration with the building-wide paging system
- IPTV system for playing cable television in public waiting areas
- Digital signage system for displaying courtroom dockets and other public information
- Dante network-based audio system for integration with the Owner's courtroom audio recording system
- Centralized A/V equipment rooms to keep all rack-mounted A/V equipment and its associated noise and heat out of the courtrooms

Stevens Institute of Technology – Gateway Complex

A/V Systems Design/Technologies

Hoboken, New Jersey

The Stevens Institution of Technology (SIT) is one of the oldest technological universities in the United States and is located on 55 acres. Our firm provided A/V systems design for two new academic buildings.

The Stevens Institution of Technology (SIT) is one of the oldest technological universities in the United States and is located on 55 acres. PProfessional Systems Engineering, an NV5 Company, provided audio/visual consulting for this project. The SIT – Gateway project consists of two new academic buildings, North and South Wing, connected by a sky bridge. Both buildings have four floors, plus a basement level, and will contain classrooms, labs, offices, and meeting/conference spaces. The scope of the A/V systems design will include classrooms, smart classrooms, lab spaces, conference rooms, common areas, the Atrium, and TED space.

The A/V system design for classrooms consisted of interactive projectors with options for analog or digital inputs as well as mobile device sharing. Each room was equipped with an all-in-one A/V control and switching system to make operation by instructor or students as easy as possible. Some of the lab spaces included video streaming and recording for presenting lectures outside of the classroom space. Several Smart classrooms are designed with multiple A/V "Hubs" where several small groups of students worked together at separate desks. Each desk had its own A/V set up, and content from any desk could be shared or broadcasted to an individual or all other desks. Conference rooms were provided with audio and video conferencing capabilities.

Multiple collaboration spaces are located throughout the open spaces within the buildings with touchscreen displays and content sharing. A TED presentation space was provided for students to give important presentations to a larger sized audience. The A/V design of this space mimicked that of a small auditorium; complete with sound reproduction and large format video projection. The control system was design to allow pre-programmed settings for easy turn on and go presentations, but also allow for more advanced audio control for signal processing and mixing, if needed for outside presenters.

Services Provided

Audio/Visual/Video

- Video display monitors
- Ultra-short throw projectors
- Interactive displays
- Analog and digital video inputs
- Video cameras
- Digital signage
- Microphones, wired and wireless
- Audio reinforcement
- A/V conferencing
- Control system
- Mobile device applications
- Infrastructure
- Digital whiteboards
- Assistive listening systems
- Audio and Video Switching
- Auto-tracking video
- cameras for remote learning and live lecture capture
- Technical furniture

Old Tappan High School & Demarest High School

Auditorium, Theater Lighting & Rigging Systems

New Jersey

This project for Northern Valley Regional Board of Education combines the scope of work for both schools into one construction document package for the bidding of the renovation projects.

This project for Northern Valley Regional Board of Education combines the scope of work for both schools into one construction document package for the bidding of the renovation projects. Professional Systems Engineering, an NV5 Company, provided design services related to audio/visual systems for the renovation of the auditorium / theaters at Old Tappan High School (767 seats) and Demarest High School (751 seats). Our firm provided design, bidding, and construction services for these renovations. The project allowed the School District to upgrade their performance spaces to reduce ongoing equipment rental costs, allow for safe operation of systems by students, and provide current technologies. The following systems were provided for each school.

Services Provided

A/V Systems

- Video projector
- Motorized screen
- Input/output panels
- Wireless microphone system
- Line array speakers
- Monitor speakers
- Amplifiers
- Digital signal processing
- Assisted listening system
- Mixing board
- Control system
- Cabling
- Wireless intercom system

Lighting Systems

- LED stage lighting – 60 fixtures each school
- Lighting fixture distribution strips
- DMX control system
- Breaker control unit
- Lighting control console

Rigging Systems

- Wall mounted truss
- Front of house ceiling mounted truss
- Motorized line sets (Demarest)
- Rigging control system

Communications

Communications Expertise

Professional Systems Engineering, an NV5 Company, has provided advanced systems for communications, educational technologies, multi-media, acoustics, and related building systems since 1986.

We have extensive experience providing complete tele/data communications infrastructure, information technology systems through expert planning, design, and engineering services.

Experience

We specialize in site-wide communications systems in special environments that include academic, performing arts, theaters, museums, justice, corrections, and diverse government and corporate clients nationwide. Our services include network information technologies, classroom, multi-purpose space, teleconferencing, multimedia systems, integrated voice/recording, and processing systems.

Client-to-Cloud Solutions

Complete client-to-cloud solutions were delivered to a national museum in the eastern U.S. and court system in the south. Both solutions included client needs studies, broadband services, Citrix connectivity as-well-as legacy adoption and all new computers, fiber switching, and network operations/server room designs.

Cutting-edge solutions were included in New Jersey K-12 school projects which are designed to fulfill a Department of Education (DOE) mission to build technologically-rich learning environments for all students across the State. Our firm was selected as tele/data communications infrastructure and technologies experts for several projects notably a new magnet science high school, a cooperative effort with New Jersey Institute of Quorum Conference Center for UCSC, Technology (NJIT), University of Medicine and Dentistry (UMDNJ), and other institutions.

We offer complete engineering and tele/data communications infrastructure consulting services directly to clients, architects and allied design professionals to facilitate project planning, design, inception and completion. The firm does not sell, provide or represent any products, equipment, manufacturers and vendors. We are a non-vested engineering firm providing innovative solutions to challenging projects.

Dayton Avenue Educational Campus

IT/Communications, Security, Education Technology & A/V Design

Passaic, New Jersey

Professional Systems Engineering, an NV5 Company, provided engineering consulting services related to IT services, communications, security, education technology, and audio/visual systems for the new Dayton Avenue Educational Campus. It will include a Pre-Kindergarten, Elementary, and Middle School on a 12 acre site. The new $163 million, 448,000 SF school will educate approximately 2,760 students in grades pre-kindergarten through eight.

This project is being completed through the NJSDA program, by design build project delivery. The design build process is using fast tract multi-phase design delivery to meet the NJSDA's project schedule.

Services Provided

Audio/Video

- Classroom presentation
- Sound system
- Interactive monitors
- Control System
- Digital signage
- Paging system
- Digital clock system
- Coaxial distribution

Security

- Access control system
- Intrusion detection system
- Video surveillance
- Emergency call box system
- Parking access
- Door release
- Intercom
- Emergency control center
- Backup emergency control center

Auditorium/Multipurpose Rooms

- Video presentation
- Sound system
- Cabling
- Control system
- Lighting system

Blackbox Theater

- Video presentation
- Sound system
- Cabling
- Control system
- Lighting system

IT/Communications

- MDF/IDF rooms
- Structural cabling
- Fiber optic cabling
- Cat 6A cabling
- Tele/data service

Hudson County Schools of Technology

(HCST) High Tech High School

IT/Communications, Security, Education Technology, Acoustics & A/V Design

Secaucus, New Jersey

This project provided a new facility for the HCST – High Tech High School to merge existing North Bergen and Jersey City campuses and provides a school for 2,000 students and 200 administration and staff members, with a gross building area of approximately 335,000 SF. It is to be the first "Fully Digital" high school in the nation.

This project provided a new facility for the HCST – High Tech High School to merge existing North Bergen and Jersey City campuses and provides a school for 2,000 students and 200 administration and staff members, with a gross building area of approximately 335,000 SF. It is the first "Fully Digital" high school in the nation.

Professional Systems Engineering, an NV5 Company, prepared bridging documents and provided consulting and review services for the Owner during the design build phase for IT, communications, security, education technology, and audio/visual systems for the new $175 million Hudson County Schools of Technology (HCST). The school spaces support the curriculum of Project Based Learning for various Career Academies, providing state of the art education and career paths for students. The building houses the School of Vocation Trades, School of Architecture/Engineering, School of Applied Sciences, and School of Performing Arts. Classrooms provide flexible teaching environments, along with spaces for remote learning and group collaboration.

Receiving LEED® Gold certification, HCST achieved the high standards and requirements for sustainability. It has been recognized as the green project of the year for schools in the State of New Jersey by the U.S. Green Building Council.

Services Provided

Audio Visual

- Classroom presentation
- Sound system
- Interactive monitors
- Control system
- Digital signage
- Paging system
- Digital clock system
- Coaxial distribution

Security

- Access control system
- Intrusion detection system
- Video surveillance
- Emergency call box system
- Parking access
- Door release
- Intercom
- Emergency control center
- Backup emergency control center

Auditorium/Theater

- Video presentation
- Sound system
- Cabling
- Control system
- Lighting system
- Rigging system

Blackbox Theater

- Video presentation
- Sound system
- Cabling
- Control system
- Lighting system

IT/Communications

- MDF/IDF rooms
- Structural cabling
- Fiber optic cabling
- Cat 6A cabling
- Tele/data service

Weitzman National Museum of American Jewish History

Technology Integration

Philadelphia, Pennsylvania

The Weitzman National Museum of American Jewish History is located on historic Independence Mall. The new building represents a history of the Jewish people, from those who gave the early colonialists financing to continue the Revolutionary War, such as Robert Morris, to today's successful Jewry in America.
Its five story 100,000 SF design will be as remarkable as the data/voice/video capabilities of the site to manage both historic content and museum transactions.

The Weitzman National Museum of American Jewish History is located in Philadelphia's Historic District on Independence Mall. Seeking expertise in integration of data, voice, and video in a secure expansive environment. The new building represents a history of the Jewish people, from those who gave the early colonialists financing to continue the Revolutionary War, such as Robert Morris, to today's successful Jewry in America. Its five story 100,000 SF design will be as remarkable as the data/voice/video capabilities of the site to manage both historic content and museum transactions.

Professional Systems Engineering, an NV5 Company, was selected to design all networks and remote services for wired and wireless networks, conferencing capabilities, exhibit data support for both high speed and wireless networks, and tele/data/video services. Our firm was chosen to design and deploy technology for this special mission to herald the assimilation of Jewry into the United States.

Our first task was to provide an assessment of existing networks, connectivity issues, information technologies transition to the new site, and recommend unified digital electronic communication platforms. This implementation of an "All Digital" site includes data/voice/video and conferencing using the latest secure appliance and network infrastructure that can handle both gift shop transactions and prevent denial-of-service attacks, as well as intrusion detection to any of the data equipment.

Our incoming services consulting required all bandwidth research, vendor transfer rate capabilities, Citrix-based VPN support, vmail-via-email support, network management, and operations support design.

Services Provided

Program Assessment

- Broadband service requirements
- QOS determination
- "All-Digital" viability Budget determination

Tele/Data Services

- Computer architecture design
- High-speed fiber connectivity
- Firewall specifications
- Intrusion detection/deterrence
- Denial of service attack defense high-speed Citrix solution
- Network operations design
- High-speed secure wireless

Voice and Video

- Full unified communication system
- VoIP phone structure
- Rich automated attendant features
- Video/teleconferencing for direct meetings
- Audio/visual support

Migration/Implementation

- Incoming service analysis
- Network management system specification
- Transition services
- Vendor negotiation and contract management

The University of Pennsylvania

Consulting, Engineering & Design Services

Philadelphia, Pennsylvania

Our staff has experience at Penn in academic housing, research, auditoria, high rises, museum, and Penn Towers engineering including security, fire protection, acoustics, A/V, noise & vibration control, mass evacuation, and networks throughout the campus.

Professional Systems Engineering's, an NV5 Company, staff has experience at Penn in academic housing, research, auditoria, high rises, museum, and Penn Towers engineering including security, fire protection, acoustics, audio/visual, noise and vibration control, mass evacuation, and networks throughout the campus.

The staff at our firm has been engaged on numerous projects by University Real Estate, Engineering Services, Facilities Management, and Public Safety. The staff performed programming, conceptual layouts and planning, through full design documentation and commissioning.

University of Pennsylvania

- Annenberg School of Communication
- Annenberg School of Communication
- Medical School - Historic Amphitheater
- Leidy Laboratories Auditorium
- Chemistry Auditorium
- Myerson Laboratories Auditorium
- Law School
- Hospital of the University of Pennsylvania
- Penn Towers Life Safety Renovations
- Penn Tower Garage
- The Quadrangle Renovation
- Vance Hall DARPA Project Support
- Franklin Field Improvements
- Penn Museum
- Steinberg Hall – Dietrich Hall
- Grad Towers B
- Kings Court
- English House
- Founders Hall
- Nichols House

Science Park High School

Digital Data, Educational Technologies & Design Services

Newark, New Jersey

Science Park High School sets a new standard of technical excellence for high schools across the nation, featuring state-of-the-art methods and equipment with accommodation for future technologies including direct connectivity to Internet2 services.

Professional Systems Engineering, LLC supplied digital data design, educational technology, consulting, and engineering services for this $80 million, state-of-the-art 250,000 SF high school with student capacity of 1,200. Science Park High School sets a new standard of technical excellence for high schools across the nation, featuring state-of-the-art methods and equipment with accommodation for future technologies including direct connectivity to Internet2 services.

Our firm supplied tele/data design services included all network, server, data center, and digital design to meet the advanced technology requirements of the Newark Science Park High School mission. The network is capable of backbone speeds of 10 gigabits and provides 1-gigabit Ethernet to each desktop. A dedicated network connection provides direct access to the resources of several local universities. The network offers wireless access throughout the building.

We also included a custom tailored A/V system designed to meet the specific needs of the subject matter to be presented. Systems included video projector, flat panel display, computer interface, Smart Boards, digital overheads, and other video services.

- Data center, TDF, MPOP, and fiber channel designs
- Full network/firewall/server/computer architecture
- Multiple incoming fiber
- Tele/data structured cabling systems with dual Xeon servers
- IP based media retrieval system
- Video messaging system including lobby rear projection displays
- Classroom A/V presentation systems for smart classrooms
- Dividable auditorium with multi-room audio system
- CATV system with IP networked video feeds
- All information technology equipment–"Desktop Ready"

Mission Critical Facilities

A full menu of assessment, planning, design, engineering, move migration, commissioning/testing, and cut-over services offer the precise level of commitment to successfully implement new digital technologies with great results.

Network Operations Centers/Mission Critical Facilities

A full menu of assessment, planning, design, engineering, move migration, commissioning/testing, and cut-over services offer the precise level of commitment to successfully implement new digital technologies processes with great results.

Both ownership and stewardship of the wide range of architectural and M/E/P services provide critical infrastructure such as emergency power, fire, and security protection that are balanced using highly skilled and talented workforce.

Communications Expertise

Professional Systems Engineering, an NV5 Company, has provided advanced systems for communications, multi-media, acoustics, and related building systems since 1986. Our firm has extensive experience providing a complete security and tele/datacom infrastructure, information technology systems planning, and design and engineering services. We specialize in site-wide communications systems in special environments including academic, justice, corrections, performing arts, theaters, museums, and for diverse government and corporate clients nationwide. Our services include security and safety systems design, network information technologies, teleconferencing, multimedia systems, and integrated voice/recording and processing systems.

Recent cutting-edge solutions included New Jersey K-12 school projects which are designed to fulfill a Department of Education (DOE) mission to build technologically-rich learning environments for all students across the State. Our firm was selected as tele/data communications infrastructure, A/V, and security technology experts for several projects including Hudson County Schools of Technology (HCST) HighTech High School, Dayton Avenue Educational Campus, and Perth Amboy Campus totaling almost $500 million in educational funding.

Philadelphia International Airport

Fiber Backbone Survey and Assessment

Philadelphia, Pennsylvania

This project is a prime example of two key services provided by our firm: large survey management and data cataloging.

Professional Systems Engineering, an NV5 Company, performed an intensive field survey of the existing fiber communications plant to determine media runs, termination conditions, port availability, and an accurate representation of the current use of their backbone. A large library of photos, field notes, and equipment sketches have been compiled and in turn, converted into a cloud-based Infrastructure Management software. Our firm provided a well-designed system resulting in enhanced reliability, increased productivity, and full understanding of availability in their fiber backbone to future contractors, designers, IT personnel, and future integrators.

This project is a prime example of two key services provided by our firm: large survey management and data cataloging.First is our ability to organize our survey efforts. The project involved 107 network rooms, 199 equipment racks, and 542 fiber panels. The full Site was completed in about two months. Our firm reviewed the scope of work then developed a detailed survey process that efficiently captured not only the required fiber information but also provided a clear picture of the existing condition of each network room. The level of detail collected helped to eliminate and resolve many questions and issues during the later phases of the project.

The second key service is creating a usable catalog from the data collected. The survey collected 50 GB of photos, port catalogs, rack layouts, and other information which needed to be cross referenced, verified, and ingested into the clients Infrastructure Management software platform. The task required an keen understanding of both the data collected but also the systems underlining database structure to create a processes and new standards that best facilitate both initial data entry and ensure the longer term reliability of the Infrastructure Management system.

Bergen County New Agency Building

IT Infrastructure Design, Audio Visual, Security & Operations Center

Hackensack, NJ

Our firm provided base bid construction documents, FF&E procurement support, project management, and regular construction administration services.

Professional Systems Engineering, an NV5 Company, provided design and construction administration services for access control, video surveillance, telephone and data communications infrastructure, and conference and presentation room audio/visual systems. The building is a 6-floor, 130,000 SF multi-agency county government administration building plus a pedestrian bridge connecting to an existing building and a new parking structure. Our firm provided base bid construction documents, FF&E procurement support, project management, and regular construction administration services. The total estimated cost of the systems designed and coordinated is $7.5 million for this project with a total budget of $145 million.

Services Provided

Audio/Video

- Small conference room audio and video presentation systems
- Large conference room presentation/ conference audio and video systems
- 50+ person large training room with large format display and audio/video presentation
- 300+ person multi-use conference center with multiple displays for flexible configurations
- Touch screen control systems and integration

Communications

- Copper tele/data cabling and infrastructure
- Fiber optic tele/data cabling and infrastructure
- Coordination of owner-provided FF&E including network switches, servers, and telephones
- Structured cabling system and coordination
- Wi-Fi access point infrastructure and layout
- Cabling and infrastructure for integration with other campus buildings

Operations Center

- Network KVM switched 24-monitor video wall
- Network KVM switched individual 4-monitor workstations
- Network-based KVM control and monitoring of all computer-based building systems including security
- Cabling, infrastructure, and coordination

Security

- Card access control
- Electronic door hardware
- Video surveillance
- Wired duress
- Infrastructure and coordination

USAID Headquarters at the Ronald Reagan Building

Communications & A/V, Security, and Fire Alarm & Protection

Washington D.C.

Our firm provided a design to incorporate lessons learned from Phase I of this project. We prepared separate bid documentation for the office space and Ops Center with coordination between the spaces. All documents included demo and phasing information.

Professional Systems Engineering, an NV5 Company, provided design services for fire alarm, sprinkler, security, tele/data communications, audio/visual, and sound masking design services for this project for the International Communications Command and Control Center as well as Mobility Design Lab Phase 2 project. The project included the renovation of approximately 40,000 SF on the 7th floor of the Ronald Reagan Building which required both demolition and new construction plans. In addition to user workstations, collaboration space, and conference rooms, the project also included secure network rooms, SCIF spaces, and a new USAID Operations Center to monitor, provide situational awareness, and rescue coordination in spontaneous international events.

The renovations allow for a more flexible modern office work space that supports mobile users, yet allows for secure work spaces required by USAID's various departments in addition to the entirely new operations command center.

Our firm provided a design to incorporate lessons learned from Phase I of this project. Our firm prepared separate bid documentation for the office space and Ops Center with coordination between the spaces. All documents included demo and phasing information.

Services Provided

Audio Visual/Acoustics

- Video conferencing
- Sound masking system
- Conference room A/V systems

Communications

- VoIP and data structured cabling system
- Fiber risers
- Multi-network

Security

- Access control hardware
- Card readers and keypads
- Video surveillance
- Motion detection
- Integration with existing systems

Operations Center

- Video wall
- A/V switching system
- A/V control system
- Sound reinforcement, audio selection
- Multi-source inputs
- Secure use indication lights

Fire Alarm

- P100 GSA Standards-compliant
- Notification and initiating devices
- Integration into existing panels
- Secure network room requirements
- Input/output matrix

Fire Protection

- Sprinkler head location
- Phased demo and install to existing mains and standpipes
- Secure network room requirements