

Cannon

Education



Reliable Responsive Solutions

We have provided Reliable Responsive Solutions to clients for projects large and small since 1976.

Our team of professionals include:

- Civil Engineers
- Structural Engineers
- Electrical Engineers
- Landscape Architects
- Agricultural Engineers
- Chemical Engineers
- Petroleum Engineers
- Process Engineers
- Mechanical Engineers
- Land Surveyors
- Land Use Planners
- Automation and Controls Engineers

Cannon



Sustainability

From our projects to our work space, we are working to reduce the environmental footprint. As an advocate of sustainable practices, we continuously look for ways to mitigate the impact and resource demand of projects in a cost-effective way. We believe that sustainability is good for business and good for the planet.

We have full-time LEED Accredited Professionals on staff to support clients who wish to pursue LEED Certification for their projects, and to help develop low impact and environmentally appropriate alternatives.

We recognize the growing importance of sustainable design and are in a position to help all of our clients incorporate environmentally appropriate choices into their projects.

Campus Facilities

Services

- Civil and Structural Engineering and Design
- Surveying and Mapping
- 3D Scanning, Modeling, and Design
- Sustainable Planning and Design
- GIS
- Design / Build
- Infrastructure Planning and Design
- LEED Documentation and Process Assistance

RECREATION CENTER

Cannon

Projects



Recreation Center

San Luis Obispo, California

The newly expanded Recreation Center at Cal Poly features 165,000 square feet of recreational space, providing students and faculty with a resort-like atmosphere to exercise and train. Facility upgrades include a fitness room, nine racquetball courts, exercise facilities, four basketball courts, 50-meter pool, martial arts room, two sand volleyball courts, 3,400 seat concert venue, and locker rooms with the expansion project providing an additional 85,000 square feet to the facility. Cannon's scope of work included the preparation of construction documents, including grading and drainage plans; demolition plan; composite utility plan; horizontal control plans; and a Storm Water Pollution Prevention Plan. The project included connection to the campus utilidor. Cannon provided utility design for the connection of hot, cold, fire and water, and sewer and gas lines.



Center for Science and Mathematics

San Luis Obispo, California

Cal Poly's Center for Science and Mathematics consists of a six-level central structure devoted to offices and student spaces with wings on either side that house classrooms and laboratories. Cannon provided the engineering and survey services for this facility. Cannon's scope of work included the preparation of construction documents, including grading and drainage plans; demolition plan; composite utility plan; horizontal control plans; a Storm Water Pollution Prevention Plan; land surveying and laser scanning; and construction administration.



University Sports Complex

San Luis Obispo, California

Cannon provided engineering design and surveying services for the construction of a \$9 million, 47-acre sports complex at California Polytechnic State University. The complex contains baseball and softball stadiums, playing fields for intramural sports, concession areas, restrooms and parking. Site planning included a NCAA football stadium and field house. Cannon was responsible for preliminary site planning and preparation of plans and specifications for grading, sewer, water and storm drain systems, utilities, street improvements and parking. Cannon also provided surveying services including aerial, topographic, and boundary surveys.



Davidson Library Boiler Replacement

Santa Barbara, California

The Davidson Library at UCSB was in need of new boilers and associated pumps and piping. The existing boilers had been in use since 1977 to heat the two-story section and the four-story section. UCSB selected Cannon to provide the engineering services for the HVAC design and construction administration/observation. The scope this project included preparation of plans, specifications, and opinions of probable cost and time line for the replacement of the existing hot water boilers, double suction circulating pumps, vent stack, and associated circulation piping. It also included preparation of heat load calculation to size the new units. Cannon also provided construction administration on a weekly basis.



Housing

Services

- Civil and Structural Engineering and Design
- Surveying and Mapping
- 3D Scanning, Modeling, and Design
- Sustainable Planning and Design
- GIS
- Design / Build
- Infrastructure Planning and Design

Projects



Poly Canyon Village

San Luis Obispo, California

With close to 3000 beds, this housing complex includes three residential neighborhood areas on 30 acres. The nine buildings and two parking lots have 615 student apartments, 2,661 student beds, and 1,926 parking spaces including commercial areas with retail and food service space as well as a recreation center with a swimming pool. Cannon was chosen to provide civil engineering services and assist with environmental permitting and LEED certification for the complex. Poly Canyon Village received recognition from American Society of Civil Engineers' San Luis Obispo and Los Angeles Sections for Outstanding Sustainability Project of the Year.



Student Housing South

San Luis Obispo, California

A residence hall for first-year students can operate as a tool for socialization by making it easier for students to develop crucial friendships, and to develop the support systems they need to stay in school.

The Cal Poly Student Housing South project is a dormitory-style student community located on the Cal Poly campus. Student Housing South includes seven residential buildings, a parking structure, housing 1,475 student beds, 28 Resident Advisor spaces, and two two-bedroom apartments. Cannon provided civil engineering and design, along with field surveying and preparation of a topographic survey.



Cerro Vista Student Apartments

San Luis Obispo, California

With hundreds of new students on the California Polytechnic State University campus each year, this 200-room/800-bed student housing facility was in high demand. Constructing 29 buildings and a commons building on a steep hillside in San Luis Obispo created design challenges. The final design incorporated the surrounding natural landscape with stepped foundations and retaining walls to minimize site disturbance. Cannon was selected to provide civil and structural engineering, surveying, and permitting.



Anacapa Residence Hall Fire Safety and Renewal

Santa Barbara, California

The 216-room Anacapa Residence Hall was built in 1954 and was one of the three original residence halls on the UCSB campus. What started out as an effort to upgrade the existing fire alarm and sprinkler systems was expanded to include upgrades of additional systems and elements to achieve a LEED Gold certification.

Improvements that contributed the facility's "greening" included the installation of more efficient lighting, insulated windows, sustainably-made furniture, low-flow bathroom fixtures, upgraded heating and cooling systems, and low-voltage data/communications and cable wiring throughout the building. Cannon provided structural and civil engineering services.



Survey & Mapping

Services

Surveys

- Boundary
- Construction
- Topographic
- Control
- As-Built
- ALTA/ACSM
- GPS-Based Geodetic
- Well Borings
- Subsidence/Settlement Monitoring
- GIS Data Collection
- Right-of-Way/Route Survey

Documents

- Certificates of Compliance
- Legal Descriptions
- Building Certifications

Mapping

- Final Maps
- Tentative Maps
- Parcel Maps
- Topographic Maps
- Aerial Mapping
- Record of Survey Maps
- Lot Line Adjustments
- ALTA Maps
- Mapping and Platting
- Constraints Analysis
- Right-of-Way Mapping

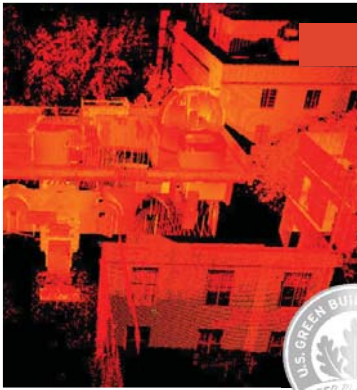
3D Laser Scanning & Modeling

Construction Staking

Cannon

Type: GST120-9
Art.No.: 667301
Leica Geosystems AG
CH-8406 Heerbrunn

Projects



Linde + Robinson Laboratory for Global Environmental Science

Pasadena, California

Constructed in 1935, The Henry M. Robinson Laboratory of Astrophysics was renovated to house the Linde + Robinson Laboratory for Global Environmental Science at Caltech. The renovation included all five floors (approximately 45,000 square feet) of the original building. The renovation established Linde + Robinson as the Nation's most energy-efficient science laboratory and the first laboratory in a historic building to merit Platinum LEED Designation.



Cannon was selected to provide 3D scanning and modeling services for the Linde + Robinson Laboratory Renovation Project. As part of the high speed, high resolution scanning process, Cannon established horizontal and vertical control points within the building interior and tied the data into existing horizontal and vertical control.



3,000 Acre ALTA Map and Boundary Survey of Ag Lands

San Luis Obispo, California

Cannon was selected to provide an American Land Title Survey (ALTA) and Boundary Survey (Record of Survey) for Cal Poly. Cannon provided a detailed research of historical land title records and reviewed over 300 unrecorded survey drawings and deeds held by the Facilities Planning Department. The results provided the University with a comprehensive understanding of the extent of agricultural land area and legal ownership boundaries, as well as identified all existing easements, leases, current land uses and potential encroachments.



Utility Base Mapping

Santa Monica, California

Santa Monica Community College selected Cannon to provide land surveying services in support of planned projects at the Santa Monica College – Main Campus. The Main Campus has an area of roughly 1.7 million square feet, with an estimated net area of 1 million square feet in need of mapping. Cannon provided a limited survey locating on the ground, the position and alignment of underground utilities. The field survey data was rendered into an AutoCAD drawing. The utility data was collected and exhibited in Cannon's CAD deliverable and registered to the project survey controls and said data "layered" according to utility type (water, storm drain, gas, etc.).



Construction Surveying for Center for Science and Mathematics

San Luis Obispo, California

The 200,000 square foot Center for Science and Mathematics building is located in the heart of Cal Poly and an intricate part of the future Centennial Park. Cannon's scope of work for this project included construction staking; horizontal and vertical control; rough grade; utilities including main and alternate light poles, sewer, water lines, and storm drains; building layout; masonry walls and enclosures; final grades for curb, gutter, and cross-gutter; utility certification; and foundation bolt certification. As well, Cannon provided construction surveying services during the project.



Infrastructure

Services

- Planning and Preliminary Engineering
- Engineering and Design
- Water Resources Planning
- ADA Compliance
- Pavement Rehabilitation Programs
- Landscape Architecture
- Cost Estimating
- Surveying and Mapping
- Program Management
- Construction Management
- Energy Conservation Planning and Auditing
- Green Street Development
- LID Element Assistance

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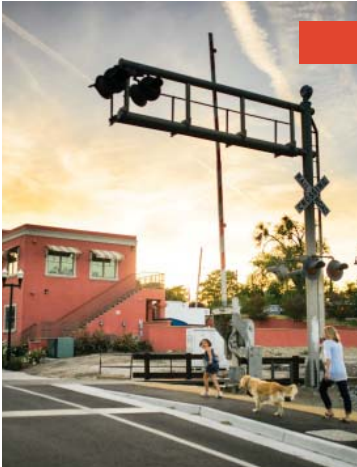
Projects



Thermal Energy Storage Tank

San Luis Obispo, California

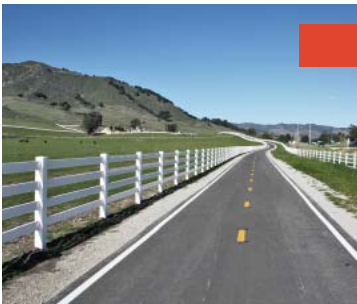
Construction of Cal Poly's Thermal Energy Storage (TES) tank delivered an energy-efficient approach to the University's heating and cooling system. Cannon provided civil and structural engineering for the TES tank area and within the existing central plant. The utility design included hot and cold water lines for the heating and cooling systems. Cannon also provided design services for the repair and repaving of the roads in Via Carta over the new utility line.



Green/Complete Street Improvements

Paso Robles, California

Historic runoff along with subsequent development of the urban areas over the course of several decades had resulted in frequent flooding, poor pavement, and inadequate facilities for bicycles and pedestrian traffic on 21st Street. To improve the situation, the City of Paso Robles decided to develop 21st Street into the first green/complete street on the Central Coast. Cannon was selected to complete the design and implementation of the project. Street improvements include: stormwater bio-retention areas; daylighted creek channel; storm drain pipes/culverts; replacement of an aging sewer line; waterline reconstruction; traffic calming for pedestrian and bicycle safety improvements, Class II bike lane, pedestrian crossing within the railroad right-of-way; intersection bulb-outs; flashing LED crosswalks; street furnishings; ornamental street lighting; repaving with conventional and pervious pavement/paver systems; engineered soil mixes and open channel plantings; and street trees. Cannon's scope of work included preliminary and final design, and construction management of the project.



Madonna Inn Bike Path

San Luis Obispo, California

Prior to construction of the Madonna Inn Bike Path, cyclists and pedestrians had to cross busy intersections and traverse a narrow bridge bike and pedestrian path. The new Class 1 bike path winds from San Luis Obispo's downtown corridor to the hotel's entrance. Cannon provided civil engineering services and worked with the design team to obtain preliminary approvals and building permits for the construction. The scope of work included preliminary and final grading plans, drainage improvements and calculations, and coordination with the City on the project.



Water and Sewer Master Plan Update

Nipomo, California

The Nipomo Community Services District selected Cannon to update their Water and Sewer Master Plan. An update was necessary due to significant changes affecting the District, such as: an update to the LAFCO Sphere of Influence Study, a Supplemental Water Inter-tie Project, an update to the Wastewater Treatment Facility Master Plan, changes to the Sewer System Overflow Regulations, and several proposed large development projects. Cannon's scope of work included preparing water demand and sewer loading projections; water and sewer modeling and training; analysis of future water and sewer regulation evaluations; recommendations for projects; project identification and prioritization; hazard and security evaluation; O&M work forecast and staffing plan; and master plan report preparation.

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Toll Free: (866) 750-8165

