



# ARTHUR ENGINEERING, INC.

## *Consulting Electrical and Control Systems Engineers*

- Wineries and Spirits Plants
- Tomato Processing Plants
- Canneries and Food Packaging Plants
- Forest Product Manufacturing Plants
- Steel Manufacturing and Finishing Plants
- High/Medium Voltage Substations
- Domestic Water Storage and Pumping Plants
- Storm Water Pumping Systems
- Wastewater and Sewage Pumping Stations
- Schools and Universities
- Offices
- Commercial Buildings
- Warehouses
- Distributed Generation
- Co-Location Data Centers

*Arthur Engineering, Inc. (AEI) has over 50 years of experience providing high quality electrical and control systems design services for commercial and industrial facilities of all sizes. We have a reputation for personalized attention to the individual needs of every project, which has resulted in long-term relationships throughout many industries. We are confident that you will find AEI qualified to assist you with all your electrical system planning and design projects.*

*AEI has a wide range of electrical design experience ranging from high voltage substation design to medium and low voltage power distribution systems. We are knowledgeable in energy efficient architectural and industrial lighting design and lighting controls, compliant with the California Title 24 lighting requirements and beyond. We have extensive experience in industrial control systems design, including programmable logic controller (PLC) system specification, layout, diagrams, SCADA / HMI, and web-enabled control and monitoring. AEI is also proficient in backup power system design and distributed generation systems.*



## OUR AREAS OF EXPERTISE INCLUDE:

- Electrical System Planning
- Load Flow Studies
- Short Circuit Studies
- Coordination Studies
- Energy Analysis/Conservation Studies
- Electrical Project Feasibility Studies
- Electrical System Option Studies
- Electrical Site Investigation and Single-Line Development
- Electrical Safety & Code Compliance Studies
- Main Service Design (High, Medium, and Low Voltage)
- High and Medium Voltage Substation Design
- Service Coordination with Electrical Utility
- Medium and Low Voltage Power Distribution System Design
- Motor Control System Design
- Hazardous Area Electrical Design
- Energy Efficient Lighting Design
- Custom Control System Design
- Programmable Logic Control Systems Specification/Design and Layout
- Stand-by and Emergency Back-up Generator System Design and Specification
- Cogeneration and Peak Shaving System Interconnection Design
- Solar Power Interconnection Design
- Electrical Construction Engineering and Observation
- Electrical Professional Witness and Accident Investigation Services

9370 Studio Court, Suite 140  
Elk Grove, CA 95758

Phone: 916-394-0864  
Fax: 916-394-8986

[www.arthurengineering.com](http://www.arthurengineering.com)

# ARTHUR ENGINEERING, INC.



## Backup Generation Projects

*Consulting Electrical  
and Control Systems  
Engineers*



*Arthur Engineering, Inc. (AEI) has designed backup power and transfer systems for many of our clients for over 45 years. Especially here in California with the threat of Utility shutdowns during the peak of fire season, our clients are looking to install backup power systems for either all or key parts of their facility. Some of these are permanent generators with automatic transfer, others choose connections for portable generators with manual transfer for their facilities. Some of our backup generation project clients are:*

- Barrel Ten Quarter Circle – Escalon, CA
- Bronco Wine Company – Ceres, CA
- E&J Gallo Wineries – Asti & Sonoma, CA
- Fetzer Vineyards – Hopland, CA
- Hurricane Electric Data Center – Fremont, CA
- Morning Star Tomato Processing Plant – Williams, CA
- Nickel & Nickel Winery – Napa, CA
- Regusci Winery – Napa, CA
- Sam Jasper Winery – Napa, CA
- Silver Oak Cellars – Oakville, CA
- West County Wastewater District – Richmond, CA
- Wine Service Co-op – St. Helena, CA
- Woodbridge Winery – Acampo, CA

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# ARTHUR ENGINEERING, INC.



## Data Center Projects

*Consulting Electrical  
and Control Systems  
Engineers*



*Arthur Engineering, Inc. (AEI) has over 25 years of experience providing electrical and control systems design for co-location type Data Centers. We have designed medium voltage service and power distribution as well as modular 480V distribution and generator backup systems. We work with the Owner closely on their selection of UPS and PDU systems and design the power distribution system around that. Some of the services we can offer at your Data Center facility include:*

- Main service design and utility coordination
- Medium and low voltage power distribution systems design
- Power metering and monitoring systems design
- Cooling system power distribution design
- Energy-efficient lighting design and Title 24 Compliance
- Emergency egress lighting systems design
- Office and warehouse lighting and power distribution design
- Load flow, coordination, and short circuit studies
- Standby electrical power generation and transfer system design
- Future planning for electrical power distribution and generator systems
- Solar power supplementation and distributed generation interconnection design

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# ARTHUR ENGINEERING, INC.



## Distributed Generation Projects

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Engineers*



*As energy costs rise, especially in California, interest in Distributed Generation (DG) opportunities continues to increase. Facilities that need hot water year round for boilers, laundry facilities, pools, etc. can benefit from running generators that can generate electricity and heat simultaneously. Arthur Engineering, Inc. has been involved with the interconnection and electrical aspects of several DG projects. We work closely with DG project developers and mechanical engineers to complete the overall project. We strive to keep current on the evolving utility interconnection rules, such as CPUC Electric Rule 21 here in California, and can assist with preparation of the utility application. In addition, we can offer prospective site electrical review to pre-determine the Electrical Code impacts and interconnection requirements for adding DG or photovoltaic systems at a given site.*

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## Distributed Generation Projects



*Some of our Distributed Generation projects include the following:*

- **ACC Energy**  
Byron Park — Walnut Creek, CA 1-60kW Tecogen Unit  
Casa Sandoval — Hayward, CA 1-60kW Tecogen Unit  
Chabot College — Hayward, CA 4-75kW Tecogen Units  
Mission de la Casa — San Jose, CA 1-75kW Tecogen Unit
- **Bloom Energy**  
Various Fuel Cell Project Interconnections throughout California 50kW to 1MW Systems
- **Fairfield-Suisun Sewer District (FSSD) — Fairfield, CA**  
Entegrity Wind Systems 4-50kW Wind Turbines
- **Morning Star Tomato Processing Plant — Williams, CA**  
3MW Steam Turbine Co-Gen System
- **North Coast Solar Resources**  
Park Bellevue Tower — Oakland, CA 65kW Capstone Micro Turbine
- **Sunpower**  
Nellis Air Force Base — Las Vegas, NV 14MW Photovoltaic System  
Florida Power & Light — Arcadia, FL Desoto 25MW System Peer Review
- **Water and Energy Management**  
Bio-Rad Laboratories — Hercules, CA 3-150kW Coast Intelligen Machines  
Maguire Jail — Redwood City, CA 2-150kW Coast Intelligen Machines  
Balfour Aquatic Center — Brentwood, CA 1-60kW Tecogen Unit  
Various other projects involving gas-recip cogen systems.

*We have designed many other Photovoltaic and DG interconnections associated with our Winery and Food Processing client facilities over the years.*

# ARTHUR ENGINEERING, INC.



## Food Processing Projects

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*Arthur Engineering, Inc. (AEI) has designed power distribution, lighting and process control systems for many Food Processing Clients for over 45 years. Our expertise is in tomato processing plants, canneries, fruit processing, nut processing and similar industries. We strive to stay abreast of the latest technologies in these industries and have the experience to specify electrical equipment that will hold up in these unique environments. We have designed medium voltage power distributions systems as well as distributed generation systems for our larger Food Processing and Winery Clients as well. We are pleased to have worked with the following food processing clients:*

- Bimbo Bakeries – Sacramento, CA
- Campbell's Soup – Sacramento, CA
- Certified Grocers – Lathrop, CA
- H.J. Heinz Company – Tracy, CA
- Ingomar Tomato Processing Plant – Los Banos, CA
- Liberty Packing Company (Morning Star) – Volta, CA
- Morning Star Packing Company – Los Banos & Williams, CA
- Nor-Cal Beverage – West Sacramento, CA
- Pacific Coast Producers – Lodi, CA
- Shinmei Foods USA – West Sacramento, CA
- Stanislaus Food Products – Modesto, CA

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# ARTHUR ENGINEERING, INC.



## Office Projects

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*Arthur Engineering, Inc. (AEI) provided design and construction observation services for a number of office building projects for a variety of clients, including a 15,000 ft<sup>2</sup> rammed earth executive office building for Fetzer Vineyards that incorporated day lighting and solar power supplementation. Some of our more unique office/building projects include:*

- Fetzer Vineyards – Hopland, CA  
15,000 ft<sup>2</sup> Rammed Earth Administration Building with PV on Roof
- Barrel Ten Quarter Circle – Napa, CA  
Domaine Napa Administration Office
- Tokolon Project at Robert Mondavi Winery – Oakville, CA  
Administration Office Building
- Hess Collection Winery – Napa, CA  
Executive Offices, Fine Art Museum and Visitor Center
- Meridian Vineyards – Paso Robles, CA  
65,000 ft<sup>2</sup> Bottling, Lab and Office
- Teichert Construction – Lathrop, CA 9,700 ft<sup>2</sup> Office Building
- Woodbridge Winery – Acampo, CA  
16,500 ft<sup>2</sup> Production Office/Lab

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# ARTHUR ENGINEERING, INC.



## School Projects

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Engineers*



*Arthur Engineering, Inc. (AEI) has provided design and construction observation services for a number of elementary, high school and community college projects for a variety of school districts. These projects include power distribution, portable classrooms and energy-efficient lighting. Some of our school projects include:*

#### **Napa Valley Unified School District**

- Alta Heights Elementary
- Bel Aire Elementary
- Browns Valley Elementary
- Carneros Elementary
- Dee T. Davis Elementary
- McPherson Elementary
- Mt. George Elementary
- Napa High
- Napa Junction Elementary
- Northwood Elementary
- Phillips Elementary
- Redwood Middle School
- Ridgeview Education Center
- Salvador Elementary
- Snow Elementary
- Vintage High
- West Park Elementary

#### **St. Helena Unified School District**

- Calistoga High School
- Robert Luis Stevenson Elementary
- St. Helena Elementary
- St. Helena High School

#### **Martinez Unified School District**

- Las Juntas Elementary

#### **Yosemite Community College District**

- Columbia College
- Modesto Junior College

#### **Las Positas Community College District**

- Chabot College - 12kV Service Upgrade

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# ARTHUR ENGINEERING, INC.



## Substation & Medium Voltage Projects

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*Arthur Engineering, Inc. (AEI) has developed a reputation for high-quality detail oriented electrical engineering design and construction observation/assistance services. We have designed a variety of high voltage substation and medium voltage distributions systems over the years. We are pleased to have provided substation and medium voltage distribution design services for the following clients:*

- Barrel Ten Quarter Circle — Escalon, CA
- Bronco Wine Company — Ceres, CA
- Certified Grocers — Lathrop, CA
- Constellation Brands, Inc. — Madera, CA
- E. & J. Gallo Wineries — Asti and Sonoma, CA
- H.J. Heinz Company — Tracy, CA
- J.R. Simplot Company — Lathrop, CA
- Liberty Packing Company — Volta, CA
- Morning Star Packing Company — Los Banos, CA
- Safeway Distribution Center — Tracy, CA
- Sutter Home Winery — Lodi, CA
- Treasury Wine Estates — Asti, CA
- Woodbridge Winery — Acampo, CA

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# ARTHUR ENGINEERING, INC.



## Warehouse Projects

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*Arthur Engineering, Inc. (AEI) has over 45 years of experience providing electrical and control systems design for warehouses of all sizes, many associated with our winery and food processing clients. We have a reputation for personalized attention to the individual needs of every warehouse project, which has resulted in long-term relationships throughout the industry. Some of the services we can offer at your warehouse facility include:*

- Main service design and utility coordination
- Medium and low voltage power distribution systems design
- Ventilation/cooling power distribution and control systems design
- Energy-efficient lighting and lighting controls design
- Title 24 Compliance calculations and documentation
- Custom motor and pump control design
- Front office power distribution and lighting design
- Load flow, coordination, and short circuit studies
- Future expansion planning for electrical power and control systems
- Standby electrical power generation system design
- Solar power supplementation and distributed generation interconnection design

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# ARTHUR ENGINEERING, INC.



## Water and Wastewater Projects

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*Arthur Engineering, Inc. (AEI) has provided electrical design and construction observation services for a number of wastewater treatment and pump station projects for a variety of municipal, winery and industrial clients. These projects include water, wastewater, irrigation and booster pump station electrical design work and/or construction engineering work. Many of our designs include standby engine generators. We are pleased to have worked with the following water/wastewater clients:*

- City of Pleasanton - Pleasanton, CA  
Ruby Hills Booster Pump Station and Lower Tank Reservoir & Upper Reservoir Upgrade, Well Pump 5 & 6 Improvements, Laurel Creek Pump Station and Moller Tank Site Construction Observation
- City of Roseville – Roseville, CA Dry Creek WWTP Construction EIM Team
- City of Tracy – Tracy, CA Naglee Burk Storm Drain Pumping Station
- Greiner – City of Pinole, CA Pinole Pump Station Renovation
- Greiner – City of Tracy, CA Hansen Sewer Lift Station
- Meridian Vineyards – Paso Robles, CA Process Waste Water System
- Placer County Water Agency – Auburn, CA  
Foothill Pump Station – Construction EIM Team
- West County Wastewater District – East Bay Area  
Carriage Hills Pump Station Upgrade, Pinole Center/Hilltop Green Sewage Lift Stations, Generator Installation - Tara Hills Pump Station

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## Winery Projects

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- Main service design and utility coordination
- Medium and low voltage power distribution systems design
- Refrigeration/cooling power distribution and control systems design
- Custom motor and pump control design
- Well and wastewater pumping power and control systems design
- PLC control system design for crushing, pressing, filtering, pump-over and bottling operations
- Web based HMI and SCADA system solutions design
- Tank lighting and temperature control systems design
- Office and warehouse lighting and power distribution design
- Load flow, coordination, and short circuit studies
- Future planning for electrical power and control systems
- Energy-efficient lighting design and Title 24 Compliance
- Standby electrical power generation system design
- Solar power supplementation and distributed generation interconnection design

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