



PILLARINNOVATIONS.COM

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In 1974, Beitzel Corporation was founded to service coal mines and industrial facilities in the mountains of western Maryland. As Beitzel's fabrication and construction business grew, its capabilities kept pace, adding excavation, concrete, plumbing, electrical, and automation teams to the mix. In 2007, Beitzel formed Pillar Innovations to focus on the technology and automation parts of its business. While both companies still work closely together, this added focus on innovation and technology helped Pillar to grow both geographically and in expertise. Today, Pillar Innovations is a trusted partner of some of the largest firms in the United States. A pillar stands firm to support something larger than itself. Pillar Innovations stands at the ready to support projects and operations in industrial applications nationwide.



Our parent company Beitzel Corporation works closely with Pillar Innovations to deliver turnkey solutions. Some of Beitzel's specialties include:

- Industrial Construction
- Crane Services
- Electrical Services
- Engineering Management
- Excavation
- Fabrication
- Machining

Find out more by visiting www.beitzelcorp.com.



At Beitzel Corporation and Pillar Innovations, safety is not simply first. Rather, it is a continuous process that starts in the design phase of a project and continues until the work is done. As an employer, our first obligation is to protect our most important asset – our people. As a contractor, we also recognize that as guests on the sites where we work, we have a responsibility for the safety of those working around us. Sometimes this means that we have to make tough decisions to ensure a safe workplace, even at the cost of production.

Our personnel are trained and empowered to make the right decisions concerning safety. We are proud of our safety record and constantly work to improve it. Recently, we have achieved 5 years with no lost time accidents, reflecting over 4.5 million hours of safe work. These milestones, while great, are simply that – milestones. What that means is that while we are headed in the right direction, we can never be content with any accidents or incidents, no matter how minor.

Safety goes beyond our work practices and goes into the very services and products we provide. Beitzel and Pillar products not only contribute to safety but also do it while increasing productivity and reducing costs. Many of our recent developments have given our customers competitive advantages while improving safety. As we continue to innovate, this mix of production and safety benefits will be the hallmark of a Beitzel or Pillar product or service.

If your organization has a production or safety concern, our team welcomes the challenge.

Merlin Beitzel
President



PROJECT MANAGEMENT & MANUFACTURING

OVERVIEW

A Partner You Can Rely On

One of the most unique aspects of Pillar Innovations is our ability to partner with companies to deliver top-notch results. Our comprehensive experience, from concept drawings through field service, sets us apart from firms who may only offer support in engineering or production. We have the capacity to provide insight and oversight on projects that highlight our partners' strengths and achieve the greatest outcomes.

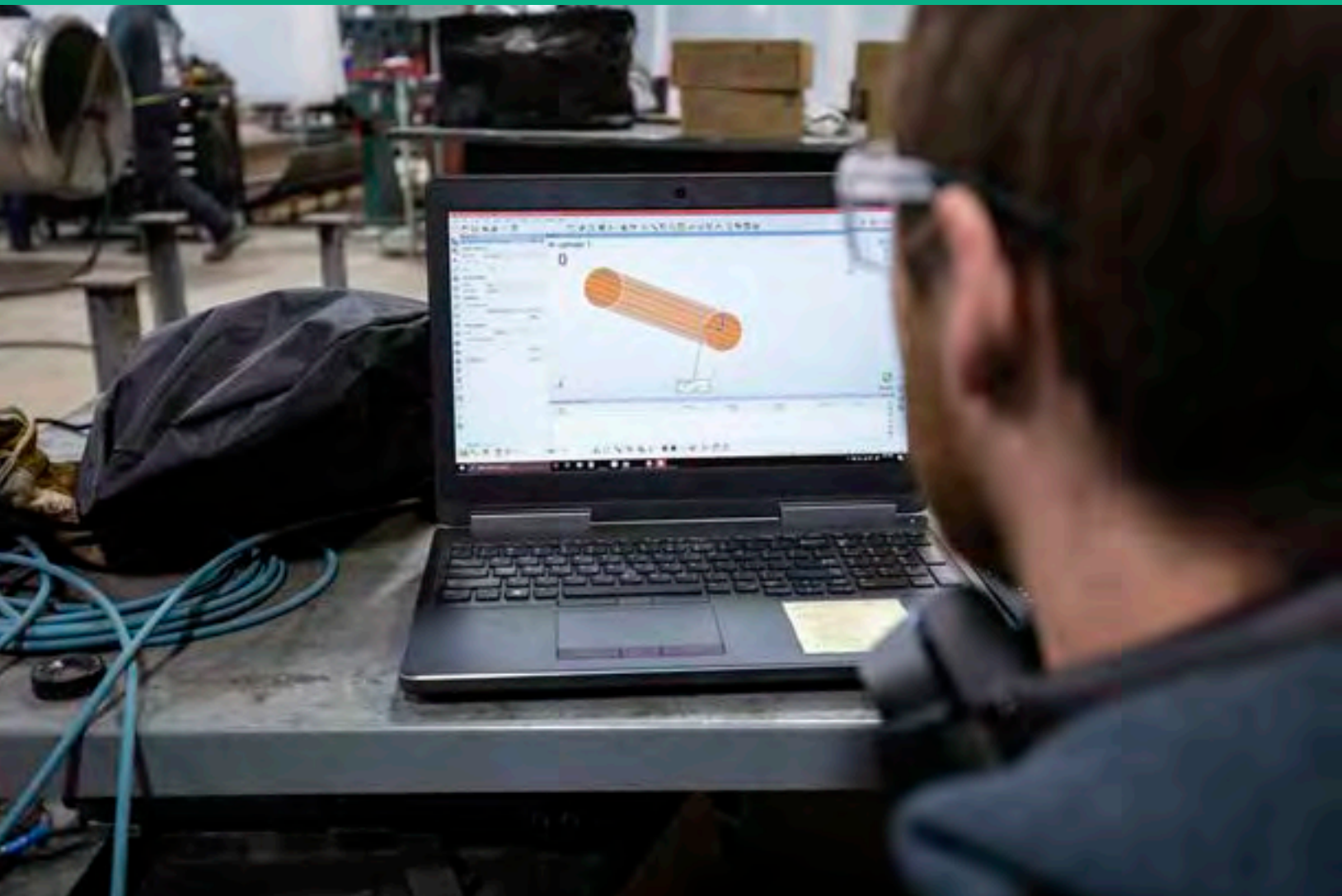
Large projects that involve many trades can be very difficult to manage. While Pillar is capable of turnkey support for many projects, we also excel at bringing teams together, filling in gaps, and managing communication to ensure projects stay on schedule and on budget. Our experience helps recognize project needs, recommend a course of action, and identify potential challenges before they become problems.

Pillar Innovations welcomes challenges. As our founder often says, "if it was easy, someone else would do it". We may not have all the answers but we are a capable team, ready to find the solution.

EXPERIENCE

- Design & Engineering Management
- Pre-Production Testing, Qualification, and Certification
- Product Manufacturing
 - From Prototype to Production
 - In-House Production Line Capacity
 - Plant Design and Startup Support
 - Strategic Outsourcing and Procurement
- Field Services
 - Delivery and Installation
 - Integration & Automation
- Support
 - Routine and Life-Cycle Maintenance
 - 24/7 Emergency Support
 - Training





ENGINEERING MANAGEMENT

OVERVIEW

Engineering Management Services

Our team is staffed with experts in structural, mechanical, electrical, controls, and fire suppression design. We provide detailed analysis and design as well as comprehensive planning and organization to ensure projects are efficient, compliant, and cost effective. Whether your project needs a second set of eyes or a complete design team we have the experience and staff to get the job done.

DISCIPLINES

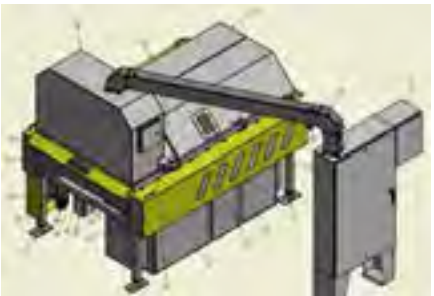
- Mechanical
- Structural
- Electrical
- Civil
- Controls & Automation
- Electronic

CAPABILITIES

- Inventor & SolidWorks 3D Modeling
- AutoCAD Electrical
- AutoCAD Mechanical
- FEA (Finite Element Analysis)
- P&ID (Process & Instrument Controls)
- Safety Controls Circuit Analysis

EXPERIENCE

- | | |
|---|---|
| • Communication Systems <ul style="list-style-type: none">• Fiber• Wireless• Ethernet | • Governmental Compliance <ul style="list-style-type: none">• OSHA• MSHA• Local Building Codes |
| • Fire Suppression & Life Safety <ul style="list-style-type: none">• Water• Foam• CO²• Dry Chemical• Pump Systems• Special Hazard | • Industry Compliance <ul style="list-style-type: none">• Factory Mutual• Underwriters Laboratory |
| • Conveyance Systems <ul style="list-style-type: none">• Food & Beverage• Glass• Manufactured Product• Commodities | • Research & Development <ul style="list-style-type: none">• Concept Design• Prototype• Testing Procedures |
| | • Drawings Packages <ul style="list-style-type: none">• Electronic Documentation• Equipment Integration• As-Built |





FARO 3D METROLOGY

FARO 3D METROLOGY

Portable, Large-Scale, High-Accuracy 3D Measurement

With the portable FARO Vantage Laser Tracker, the process of measuring large parts, molds, assemblies and machines is no longer frustrating or time consuming. The FARO makes on-site measurement convenient and fast by tracking a target that the operator moves from one point to another on the object being measured. Once scanned, the object's measurements can be compared to CAD data with precision and accuracy, allowing teams to move forward with confidence. Pillar's skilled operators have the experience, certifications, and qualifications to provide turn-key metrology services.



CAPABILITIES

- Large - volume 3D Measurement
- In - place inspection of large parts and assemblies
- Repeatable and reliable measurements
- Documentation
- Portable

APPLICATIONS

Production, fabrication, and assembly

- Alignment during assembly
- Machine tool installation, alignment, and maintenance
- Tool, die, and mold building
- Manufacturing equipment alignment

Quality control and inspection

- Part and assembly inspection
- GD&T Analysis
- CAD comparisons
- Documentation

Product design and engineering

- Generate rapid prototyping files
- GD&T Analysis
- CAD comparisons
- Reverse engineering
- Replacement parts production

QUALIFICATIONS

- Skilled operators
- Trained by FARO
- Polyworks certified
- OSHA 30 / MSHA / Safeland



MACHINE BUILDING

OVERVIEW

Custom Machine Builds to Meet Your Needs

Pillar Innovations is committed to delivering solutions that maximize ROI, safety, efficiency, and quality. We provide turnkey support throughout design and installation, as well as 24/7 support after commissioning.

Innovation is not just our name; it's what we do. Our team goes beyond reproducing standard processes to develop game-changing solutions to difficult challenges. With fabrication, machining, mechanical, and programming in-house Pillar is truly a turn-key provider of custom machines. Our facilities are large enough to allow for offsite run-offs to minimize downtime and speed up installation. Whether your challenge is cycle time, quality, reliability, or integration, Pillar is ready to meet your needs.

APPLICATIONS

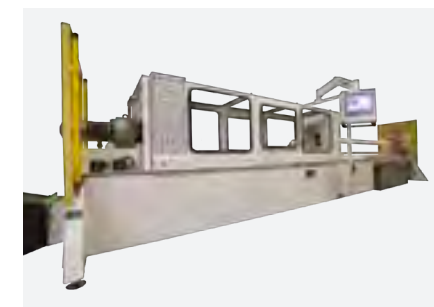
- Custom Machines
- Robotic Cells
- Retooling & Upgrades
- Life Cycle Testing
- Environmental Testing
- In-Process Quality Control
- Inspections
- Conveyance & Material Handling

IN-HOUSE CAPABILITIES

- Design
- Machining
- Fabrication
- Automation & Integration
- Turnkey Installation
- Service and Support

INDUSTRY EXPERIENCE

- Automotive
- Defense
- Electronics
- Energy
- Food & Beverage
- Glass
- Mills
- Pharmaceutical
- Recycling
- Wood





AUTOMATION & INTEGRATION

INDUSTRIAL AUTOMATION

Scalable Solutions

Pillar offers turnkey packages that centralize and integrate processes into one dependable system. Gone are the days of multiple proprietary systems and control rooms littered with servers and screens. Our systems usher in a new era of peace of mind with user-friendly integrated systems.

The software is available to individual clients at the local network level or remotely via a secure and proven web client. Additionally, provision is made to limit or restrict access so that only qualified individuals have the ability to access or make changes to certain areas of the software.

Pillar's systems utilize open architecture, providing for integration of all industrial control and monitoring hardware. This leverages the reliability and controllability of PLCs with the speed and accuracy of fiber optics. The modular software enables you to tailor the system to your needs by purchasing only portions beneficial to your operation.

Pillar's team includes controls designers, industrial programmers, software engineers, qualified technicians, and certified electricians who are available around the clock.

FEATURES

- Modular Design Easily Integrates Multiple Systems
- Scalability Allows the System to Grow with the Operation
- Automatic Electronic Data Storage
- Built-in Security to Limit and Control User Access
- Surface Components are Rack-Mounted for Neat Installations, even in Small Quarters
- MSHA-Compliant Monitoring Systems

SERVICES

- Networking
- System Integration
- Troubleshooting
- PLC Programming
- 24/7 Emergency Support

APPLICATIONS

- Manufacturing
- Mining
- Oil & Gas
- Aggregate / Cement
- Water/Wastewater
- Civil



PLANT AUTOMATION

Automation and Control for Your Site

Pillar Innovations is an experienced turn-key provider of PLC programming, software control packages, network integration, and instrumentation for many leaders in the energy, manufacturing, and public works industries. Pillar can take your project from design and fabrication to installation and commissioning.

PLC & ROBOTIC PROGRAMMING

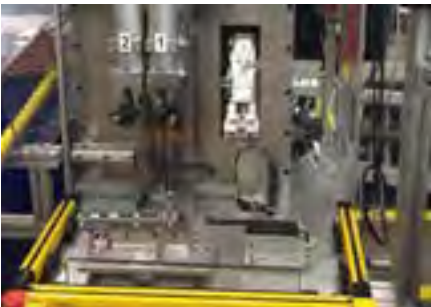
- | PLC Experience | Robotic Experience |
|---|---|
| <ul style="list-style-type: none">Allen BradleySchneider ElectricSiemensOmronMitsubishiProfaceBeckhoffToyopucHorner | <ul style="list-style-type: none">FanucMotoman/YaskawaABBMitsubishiDensoYamaha |

ELECTRICAL DESIGN, PANEL DESIGN, & FABRICATION

- Panel Design & Fabrication
- UL 508A Listed Panel Shops
 - NFPA 70E
 - Hazardous Location Design and Fabrication
 - ATEX
 - MSHA

MACHINE DESIGN, FABRICATION, & RETOOLING

- Custom Machines from Concept to Production
- 100,000 sq. ft. Fabrication Shop
- Design



MACHINE VISION

- Programming, Training, Setup, Troubleshooting, Commissioning
- Experience
 - Cognex
 - Keyence
 - Banner

INSTRUMENTATION & CALIBRATION

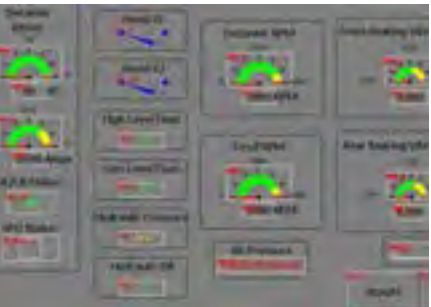
- | Protocols | Applications |
|--|--|
| <ul style="list-style-type: none">HART4-20maModbus0-5/10V | <ul style="list-style-type: none">FlowPressureTemperatureLevel/PositionWater QualityAtmospheric |

NETWORKING

- From in-plant Networking to Remote Wireless Links
- Protocols
 - TCP/IP
 - Ethernet IP
 - DeviceNet
 - EtherCAT
 - CCLink
- Media
 - Fiber Optics
 - Copper
 - Wireless PTP/PTMP

FIELD SERVICES & TROUBLESHOOTING

- 24/7 Support
- Qualifications
 - TUV
 - MSHA
 - Safeland/Safegulf





MOBILITY & IoT

OVERVIEW

Custom Mobility & IoT Solutions

We aim to keep you connected to your operation, whether you're onsite or on the road. When you need crucial data at your fingertips, our dedicated software team has your back. Supported by our team with decades of experience in the industries we serve, we'll customize the right solution to fit your organization, workflow, and goals. We make effective use of mobile technology such as smartphones and tablets to give your workforce an intuitive and easy-to-master competitive advantage. Using a customer-focused development approach – you can expect consistent results from an involved, creative, and knowledgeable team of experts regardless of size or scope.



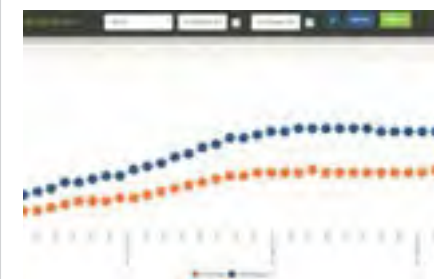
FIELD SERVICES WEB PORTAL

- Industrial Internet of Things (IIoT) Platform Designed for the Industries We Serve
- Sensor Agnostic System Allows Flexibility & Reduces Lead Time
- Provides Data Visualization and Aggregation for Remote Assets
- Works Great on Desktops, Tablets, & Smartphones
- Integrated Alarming Capabilities via SMS & Email
- Visit: Fieldservices.io



WEB APPLICATION DEVELOPMENT

- Developing & Hosting Software-as-a-Service Applications
- Writing Mobile Applications for iOS and Android
- Performing Predictive Analytics Using Windows Time Functions & Statistical Analytics
- Real-Time Data Calculations for Use in Engineering Diagnostics & Predictive Maintenance
- Internal Portal Development
- Secure Design, Testing, & Hosting Using AWS
- Ability to Pull Data from ERPs & Other Existing Software
- Programming in Objective-C, Javascript, Java, CSS, HTML, NodeJS, & Python
- Managing Various Databases Including: MySQL, CouchDB, DynamoDC, & SQLite
- Using AWS Kinesis to Perform Real-Time Data Aggregation
- Big Data Solutions Using AWS Redshift & S3



PROJECT MANAGEMENT, MARKETING, & CONSULTING

- Customer-Facing Website Creation
- Agile Software Development & Project Management Services
- Electrical/Mechanical Design, Prototyping, & Testing
- Video Production
- Logo Design
- Safety & Compliance Reporting

VIBRATION & TEMPERATURE MONITORING

Monitoring Frequency in Minutes... Not Months

Pillar Innovations’ wireless vibration and temperature monitoring system integrates industry-grade, battery-powered vibration and temperature sensors into secure monitoring systems. Using our Industrial Internet of Things Platform, customers can rely on a secure, mobile-optimized monitoring solutions with alarming and notification capabilities.

DEVICE FEATURES

- Estimated 2-Year Battery Life Based on 5 Minute Reporting Time
- 2-Axis Accelerometer with 10-4kHz Frequency Range
- -40°F to 222°F Temperature Range
- Rugged Aluminum IP67 Enclosure
- 1 Watt Radio with LOS Range over 1 Mile
- Ability to Integrate with Existing HMI

DATA CAPABILITIES

- Solutions to Produce Raw Data for FFT & Vibration Analysis
- WiFi, Cellular, Radio, or Hardwire Communications
- Each Collector Handles 30 Nodes

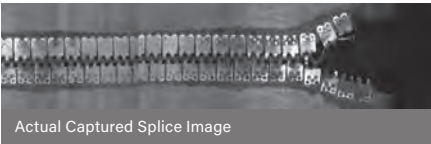


BELT VISION

We've developed an efficient solution for monitoring belt splices for damage. Our solution, called "Belt Vision", allows you to manage your belts with preventative maintenance rather than costly repairs. By capturing high resolution images of splices during normal operation, you can monitor belts at your convenience and perform necessary repairs before a costly break occurs.

DATA CAPABILITIES

- Monitors Belts up to 96" Wide
- Generates Hi-Res Images of Each Splice
- Archives Images for Viewing Deterioration over Time
- Distributes Images over Network with Web Application
- Full Install and Training Options Available



FIELD SERVICES.IO WEB PLATFORM

Monitoring & Presenting Field Data Your Way

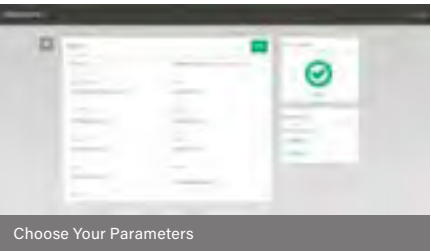
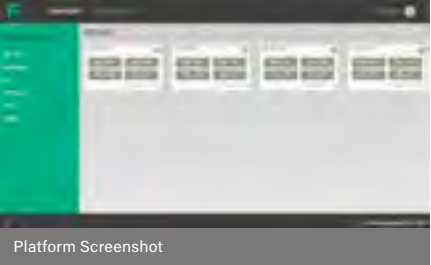
FieldServices.io is an IoT (Internet of Things) platform designed around having information about your assets on hand that will save your team time and money. Our intuitive web app provides data on your sensors and is easy to read on any device. Using our notifications platform, you can have peace of mind knowing that if anything needs your attention, we'll let you know with an email or a text.

FIELD SERVICES WEB PORTAL

- Cloud-based SCADA Interface
- Integrated with New & Existing Sensors
- 24/7 Access via Web & Mobile
- User-Defined Alarming Thresholds
- On-Demand Trending Analysis
- Remote Web Monitoring Support
- Automatic Text & Email Alerts
- End-to-End Encryption

ADVANTAGES

- Intuitive, Application-Specific Design
- Experienced Field Support and Service
- Looks and Works Great on Mobile Devices
- Affordable Monitoring Solution
- Helps Meet EH&S Compliance Responsibilities



CUSTOMIZED WEB APPLICATION DEVELOPMENT

Pillar's Software Solutions team offers custom web application development to give you a competitive edge in your industry. We build solutions that reduce errors, improve productivity, and analyze business information in new ways.

Services

- Timekeeping and ERP Integration
- Delivery Tickets and Tracking
- Internal Portal Development
- Quality Assurance
- Document Uploaders and Revision Tracking
- Custom Solutions Available upon Request



MUSTERALERT

Site-Wide Alerting System

The new Pillar Innovations wireless MusterAlert™ is designed to provide instantaneous alerts to the entire jobsite without waking up the neighbors. Leveraging wireless radio frequency meshing communication in conjunction with energy harvesting and advanced battery technology options, our easily deployed MusterAlert™ can be used to alert your entire jobsite of changing conditions. The distributed design reliably and instantly covers remote sections without the need for a centralized horn that may draw unwanted attention. With our cellular communication options, management can stay informed of status changes instantly by way of a text, email, or phone call.

FEATURES

- Fully-customizable visual and audible options
- Flexible alarm trigger options can be centralized or distributed with pushbuttons and sensors
- Customizable power source AC or DC (Solar)
- Up to 8 hours of horn and strobe runtime with standard equipment
- Seamless retrofit into existing plants — No need to run cables or conduit
- Perfect for temporary jobsites or specific areas of concern
- Compact devices easily installed and moved
- Mesh network radio system for redundant communication
- AES encryption

OPTIONAL FEATURES

- Cellular communication to the Cloud
- Automatic text and email alert notifications
- Integration with existing alarms systems to expand an existing system’s effective footprint
- Interface with peripherals such as automatic shut downs
- Flexible mounting — wall, stand, or pole-mounted
- Indoor or outdoor applications
- Lease or purchase options available



PERMISSIBLE SOLUTIONS

Design & Manufacturing

Pillar Innovations is well versed in the design and approval of permissible equipment. From high-level design reviews to full-scale development and approval, our team has the knowledge and experience to streamline the approval process. Our in-house testing services will spare you from time consuming delays due to failed tests.

DESIGN SERVICES

- Intrinsically-Safe Circuitry Design & Review
- Intrinsically-Safe & Explosion-Proof Packaging Design
- In-House Testing
 - Exploratory Spark Testing
 - Environmental Testing
 - Oscilloscope Testing
- Project Management
- Manufacturing Support

APPLICATION SUPPORT SERVICES

- Detailed Understanding of Policies and Criteria
- Evaluation of Designs for Compliance
- Creation of Submittal Package
- Management of the Approval Process
- Support for In-House Testing and Agency Meetings

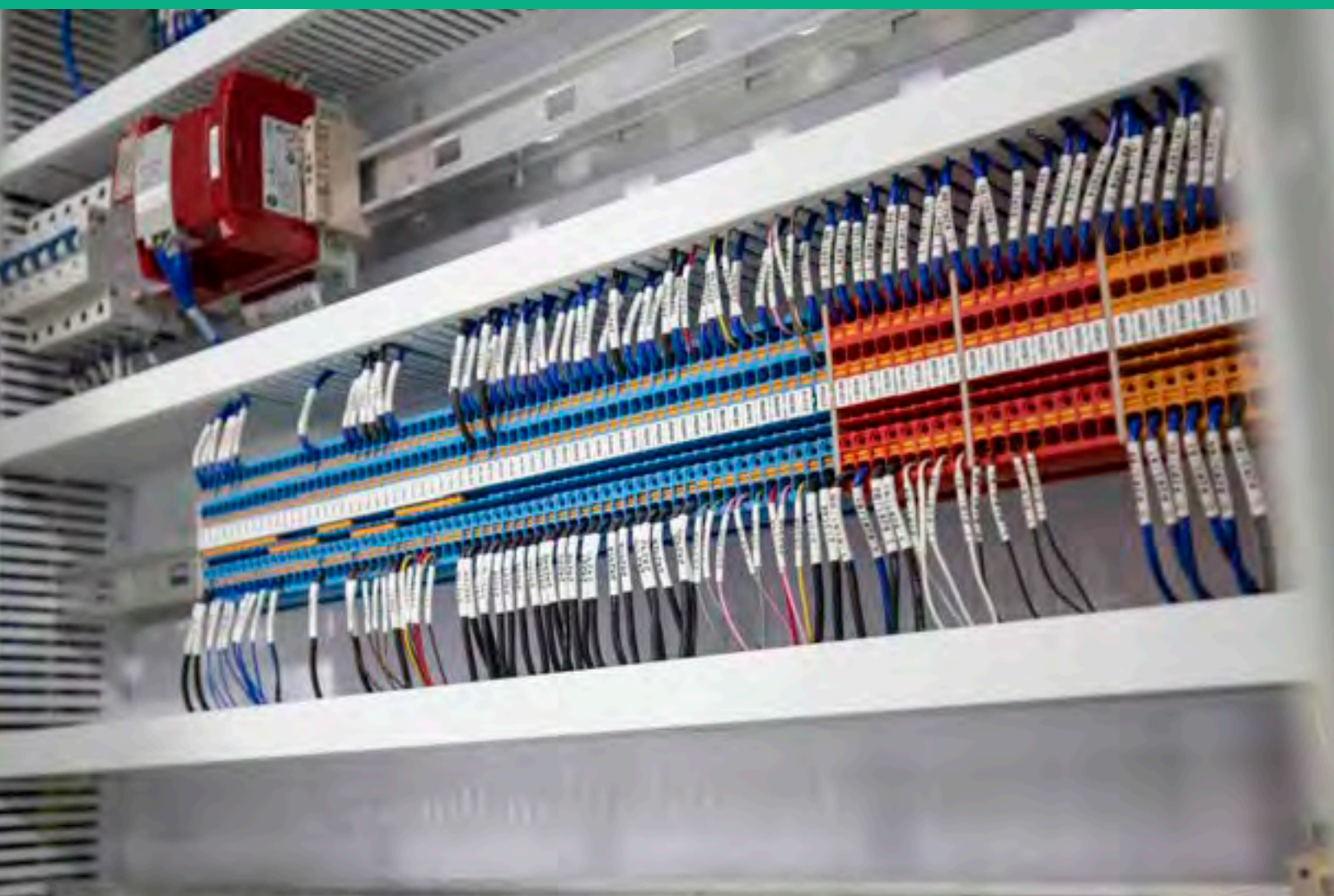
MANUFACTURING

- UL Listed Panel Shop
- Custom Quality Control
- Strategic Sourcing & Inventory Management
- Product Lifecycle Support

SUPPORTED ENTITIES

- MSHA
- UL
- FM
- ATEX





ELECTRICAL

OVERVIEW

Meeting all of Your High and Low Voltage Needs

Pillar's electrical team consists of a dynamic group of electricians that performs a wide variety of services throughout diverse industries. Our team manages standalone projects, as well as collaborates with our automation, instrumentation, site security, and other departments. Rain or shine, we'll be there to get the job done right.

SERVICES

- Industrial and Commercial Design and Installation
- Electrical Distribution and Motor Control Centers
- Industrial Controls and Safety Systems
- Fire Wire Emergency Stop Systems
- UL Certified Panel Shop
- High Voltage Cable Testing and Repair
- Interior and Exterior Lighting Systems
- Solar Power Systems
- Hazardous Locations
- Generator Power/Emergency Backup/Off-grid Systems
- PLC Cabinet Installation (Industrial and Commercial)
- Fire Alarm, Measurement, and Data Collection Systems
- Oil & Gas: Electrical Services and Installations
 - Upstream
 - Midstream
- Mining: Electrical Services and Installations
 - Underground
 - Surface
- Lightning Protection Services

QUALIFICATIONS

- UL Certified
- Licensed Electrical Contractor
- Licensed Master, Journeymen, and Apprentice Electricians
- MSHA Certified Electricians





INSTRUMENTATION

OVERVIEW

Monitoring and Control Solutions

Our instrumentation team provides a wide variety of monitoring and control solutions ranging from water management to atmospheric monitoring systems. Pillar is able to offer well-rounded, customized solutions for all instrumentation needs, due to our technicians' experience with the installation, maintenance, and calibration of a broad range of related equipment.

SERVICE CAPABILITIES

- Gas Monitoring Systems
 - Single & Multi-Point
 - Wired & Wireless
- Analytical Water Quality
 - pH, Conductivity, TDS (Total Dissolved Solids), Turbidity
 - Chlorine (free and total) & Chlorides
 - Iron, Manganese, and Sulfate
- Flow Meter Verifications and Calibrations
 - Magnetic, Paddle, Turbine, Positive Displacement, Ultrasonic, Doppler, and Open Channel
- Pressure
 - Vacuum to 10,000PSI
- Temperature
 - RTD (Resistance Temperature Detector)
 - TC (Thermocouple)
- Level Monitor
- Scales
 - Belt Scales, Balances, and Digital Scales
- Linear & Rotary Proportional Actuator

FIELD SERVICES WEB PORTAL

- Cloud-based SCADA Interface
- Integrated with New & Existing Sensors
- 24/7 Access via Web & Mobile
- User-Defined Alarming Thresholds
- On-Demand Trending Analysis
- Remote Web Monitoring Support
- Automatic Text & Email Alerts
- End-to-End Encryption





FIBER OPTICS

OVERVIEW

Cover Miles in the Blink of an Eye

We offer full-service fiber optics project support for our customers. Our fiber optics department serves as both a cable assembly and service provider. We have a full inventory at our fingertips which allows for rapid response to new orders or service requests. In addition, our field and shop technicians are on call 24/7 for troubleshooting and installation needs.

SHOP/MANUFACTURING SERVICES

- Design & Development of Pre-terminated Cable Assemblies
- Manufacturing of Pre-terminated Assemblies
 - Mass Production or One-Off Custom Units
- Refurbish CTR Service (Clean, Test, Repair)
 - All Makes and Type Fiber Optic Cables
- Design & Construction of Active or Passive Fiber Distribution Enclosure Systems
- Advanced Testing & Comprehensive Reporting
- Product Assembly Instructions & Drawings Packages

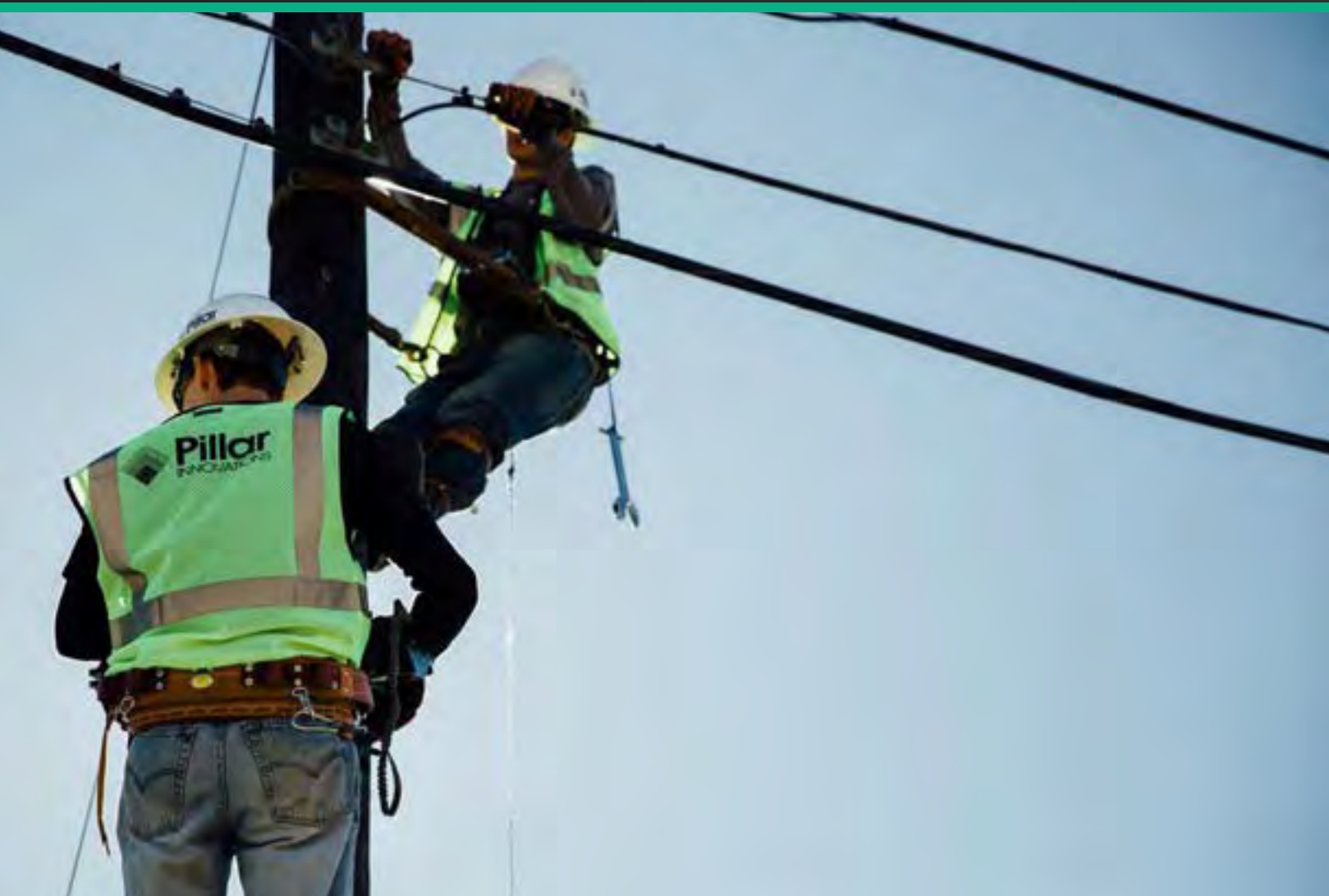
FIELD/CONSTRUCTION SERVICES

- Consulting
- OPGW Line Auditing and Assessment
- Civil Work, Permitting, & Design Drawing
- Loss Budgeting
- Equipment and Component Specification
- Maintenance
- Traffic Control & Flagging Services
- Installation
 - Below Grade Construction
 - Aerial Construction in Power Space
 - Conduit
 - Duct
- Pole Supply & Installation
- Termination, Splicing, Acceptance Testing
- Enclosure Layout/Construction
- Borehole Cable Drops
- Testing, Troubleshooting, & Repair
- Emergency Restoration
- State of MD Master Contractor for Cable & Wiring Materials / Services

DISTRIBUTION SERVICES

- OPGW (Optical Ground Wire) Cable & Hardware for Power Line Construction
- ADSS (All-Dielectric Self-Supporting) Cable and Hardware
- Bulk Cable Sales
- Bulk Connectors Sales
- Test Equipment for Sales & Service
- Consumables





COMMUNICATIONS

OVERVIEW

Keeping Your Site in Close Contact

Whether mountainous terrain or underground mines, Pillar's communications department excels. We have successfully implemented systems that run miles into the ground and operate in the most inclement of weather conditions. We provide around-the-clock technical support for our customers in case of emergencies and stock mission critical components in our warehouses nationwide.

SERVICES

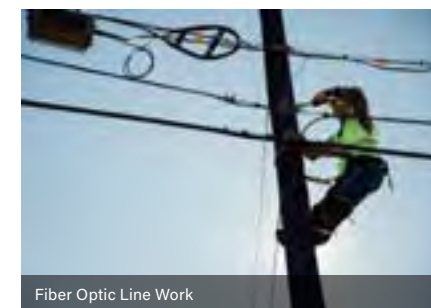
- Wireless Point-to-Point and Point-to-Multi Point
 - Unlicensed and Licensed
- Cellular/CDMA Solutions
- VSAT Satellite Solutions
- Two-Way Radio Systems & Solutions
 - (LMR) Land Mobile Radio Systems
 - Analog
 - Digital
 - Leaky Feeder Systems
- Fiber Optic Network
- Personnel Tracking and Monitoring
- (LMR) Two Way FCC Coordinating & Licensing
- Licensed Microwave FCC Coordinating & Licensing

AFFILIATES

- Motorola 2-way Dealer
- Cambium Networks Partner
- FreeWave Partner
- VSAT Certified Installer
- RAJANT Partner

APPLICATIONS

- SCADA Networks
- WISP Networks
- Emergency Communications
- Remote Communications
- Backhaul / Private Networks



Fiber Optic Line Work



VSAT Satellite Solutions



Microwave Dish Installation



Turnkey Solutions





TOWERS

TOWER SERVICES

Helping You Reach New Heights

From site preparation, to installation of radio equipment, Pillar offers comprehensive tower solutions and services even at hundreds of feet above the ground.

TOWER SERVICES

- Complete Tower Site Installation
- Permitting/E&S (Erosion & Sediment) Control Site Design
- Structural Analysis
- Geo Technical Testing
- Excavation
- Civil/Foundation - Design & Installation
- Supply Steel/Steel Erection
- Shelter Manufacturing/Supplier
- Electrical Services
- HVAC Wall Mount Units
- Line & Antenna Installation
- Troubleshooting
- Tower & Site Inspections
- Tower & Site Maintenance
- Site Grounding Installation & Testing
- Site Decommissioning
- Site Audits
- Tower Lighting
- Microwave Links (Licensed & Unlicensed)

APPLICATIONS

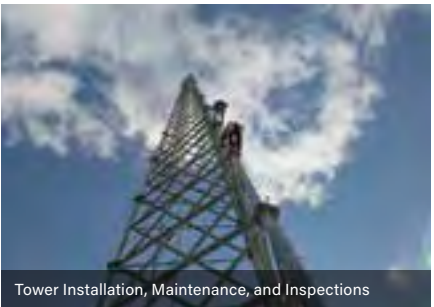
- SCADA Networks
- WISP Networks
- Emergency Communications
- Relay to Remote Sites
- Backhaul Microwave Communications
- (LMR) Land Mobile Radio Two-Way Radio

QUALIFICATIONS

- NATE Member since 2011
- Certified Tower Climbers
- Certified Pole Climbers
- Certified Tower Rescue Techs
- Capstan Hoist Certified Operators
- Qualified Riggers & Signalers
- RF Awareness Trained
- CADDY - Cadweld Qualified
- VSAT Certified Installer
- Flash Technology Lighting Certified
- Commscope Connector Certified
- Spectrum Analyzer Qualified
- First Aid/CPR Trained
- OSHA
- PEC Safeland
- MSHA
- Crown Castle Contractor
- American Tower Corporation
- SBA Towers



Foundation Installation



Tower Installation, Maintenance, and Inspections



Turnkey Site





E-CAT & E-SAT TOWERS

Equilibrium Communications & Solar Articulating Towers

Our e-CAT Towers provide remote communications and reliable surveillance technology, reducing the cost of maintenance and mitigating risk. Additionally, our e-SAT Towers provide a safe, cost-effective solar solution for use in dark territory. Our innovative articulation method enables a worker to lower these towers to ground level for maintenance and repairs utilizing only an 18v battery operated drill. "True Positive Stop" technology utilizes a non-hydraulic jackscrew during articulation, allowing towers to be safely raised and lowered without reliance on gravity and regardless of wind conditions.

Our "Full Penetration Connection" ensures long term reliability and offers an industry leading tower-to-base connection method. During standardized fatigue tests, the "FPC" lasts twice as long as the closest competition.

SPECIFICATIONS

Model	Height	Wind Rating	Solar Panel EPA	Antenna EPA
eCAT 20	20'	90 mph	N/A	3 sq. ft.
eCAT 40	40'	90 mph	N/A	3 sq. ft.
eCAT 60	60'	90 mph	N/A	3 sq. ft.
eSAT 2010-90	20'	90 mph	110 sq. ft.	3 sq. ft.
eSAT 2006-90	20'	90 mph	55 sq. ft.	3 sq. ft.
eSAT 2006-120	20'	120 mph	55 sq. ft.	3 sq. ft.

Operator Safety & Ease of Use

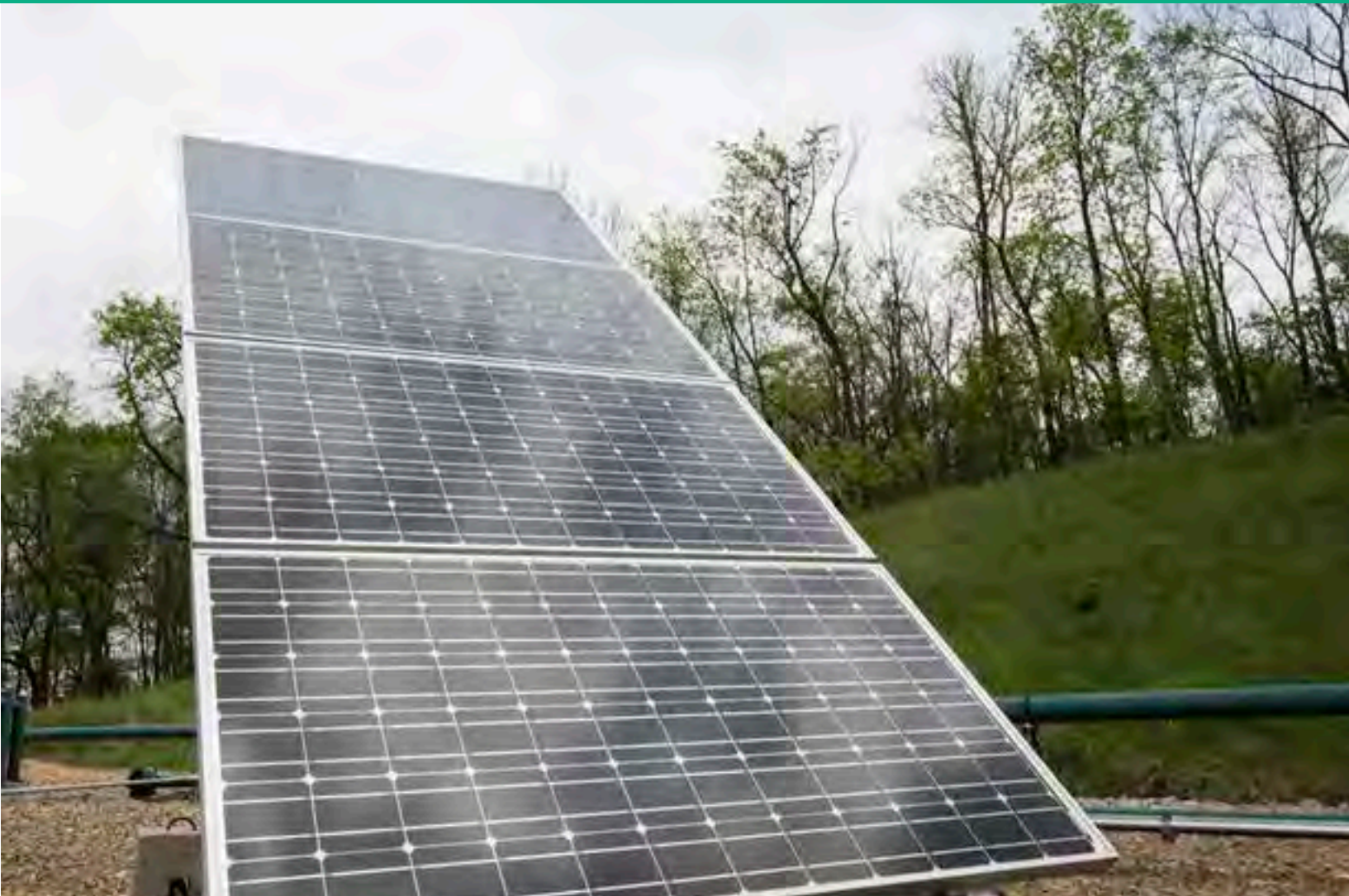
- Eliminates the Need for Climbing Maneuvers and Boom-Truck Operations
- "True Positive Stop" (TPS) Technology Protects Workers While Articulating
- Fully Articulates Utilizing an 18v Battery-Operated Drill
- Operated by One Worker
- Rapid Installation; Can Mount to a Dixie Precast Foundation
- Pre-wired from the Factory
- Single Coaxial Run Does Not Require Disconnection for Articulation

Durability

- Hot Dipped Galvanization on Both the Tower and Associated Hardware
- "Full Penetration Connection" Tower-to-Base Connection Method
- Round Tube Design for Better Force Dispersion
- Capable of Handling Wind Loads of up to 90-120mph

Optional Features

- Locking Tamper-Resistant Cover
 - Hand-Crank for Tower Articulation
 - Custom Made Enclosures
 - Varmint Guard
- Antenna Mount
 - Variable Height Antenna Mount
 - Remote Controlled Articulation
 - Full Installation



OFF-GRID SOLUTIONS



OVERVIEW

High Quality. Low Impact.

Off-grid solutions require more than a cookie cutter approach. Pillar's diverse team of designers and tradesmen has the skill and experience to design and deploy tailored systems. Where some firms are focused on a specific technology, application, or industry, our approach is to evaluate the need and supply a package that is the best fit from a value and performance standpoint. We have produced a wide range of off-grid solutions including solar powered train monitoring, an underground mining refuge chamber, and a hydraulically powered manufacturing facility. From remote sites to rugged industrial installations to green initiatives our team has you covered.

TECHNOLOGY

- Solar
- Wind
- Battery Backup
- Generator
- Compressed Air

APPLICATIONS

- Communications
- SCADA
- Climate Control
- Security

SERVICES

- Design
- Manufacturing
- Installation
- Service & Maintenance



SECURITY & ACCESS CONTROL



OVERVIEW

A Protective Eye

Pillar Innovations is uniquely suited to provide turnkey site security and access control. By combining the latest camera and access control technology with on-call service and support, we provide reliable solutions that can be trusted in a critical environment. From key card access to hand scanners, we've installed and maintained access control systems tailored to specific client needs. Our systems range from basic access control and recording, to full integration with payroll and contractor management. Payroll clients have reported full ROI in as little as six weeks. These electronic means coupled with automated physical barriers such as gates, doors, and cages, can help guarantee a secure site, free of unwanted visitors.

SECURITY CAMERAS

- Remote Access
- DVR Systems
- IP or Analog Camera Surveillance
- CATV (Cable TV Distribution)
- CCTV (Closed Circuit TV)
- Bulletproof Enclosures
- Pan/Tilt/Zoom
- Intrusion Detection
- Infrared Low Light Cameras
- Thermal Imaging
- Video Analytics

ACCESS CONTROL

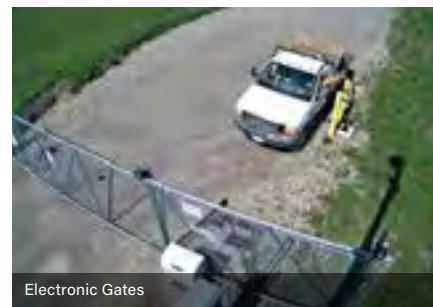
- Key Card Access Control
- Hand Scanners & Biometric Solutions
- Electronic Gates
- Payroll & Contractor Integration
- Security Alarms
- Integration to Fire Alarm & Cameras



Access Control



Security Cameras



Electronic Gates



Easier Monitoring



FIRE PROTECTION

FIRE ALARMS

Detect Fast. Alert Faster.

We offer conventional and addressable fire alarm systems as well as early detection aspirating systems and video detection systems. All have releasing options that allow them to trigger a fire suppression system activation.

Conventional systems are used for small zones or systems that do not require pin point identification. Addressable systems will tell you exactly which detector or location is sensing a fire or having an issue. Aspirating systems utilize air sampling and offer some of the earliest detection times. Video detection systems are even faster than air sampling and allow users to see the hazard zone via camera/detector feed.

SYSTEMS

- Conventional & Addressable Systems
- Video Systems
- Air Sampling Systems
- Automated Fire Doors

APPLICATIONS

- Electrical Rooms
- Conveyor Tunnels
- Tube Galleries
- Commercial Venues
- Educational Facilities
- Industrial Sites
- Power Generation
- Mining Operations
- Commercial Construction

SUPPLIERS/PARTNERS

- Notifier
- Silent Knight
- Fire Lite
- Kidde Fire Systems
- Fike
- Xtralis



FIRE SUPPRESSION

Industrial & Commercial Fire Suppression

Pillar Innovations offers full service fire suppression for industrial and commercial applications. Our capabilities span the design, installation, and inspection of fire suppression and detection equipment, from start to finish. Our technicians can evaluate hazards, select appropriate design components, and submit the system to the Authority Having Jurisdiction for approval. After design, our qualified technicians will install your system and provide post-installation inspection, testing, and maintenance services.

SOLUTIONS

- Systems
 - Sprinkler
 - Dry Chemical
 - Wet Chemical
 - Clean Agent
 - Inert Gas
 - Water Mist
 - Aerosol
 - Foam Injection
 - Special Hazard Protection
- Fire Pump Installation and Service
- Detection and Alarms
- Inspections

APPLICATIONS

- Industrial Sites
- Power Generation
- Mining Operations
- Commercial Venues
- Mobile Equipment

QUALIFICATIONS

- NICET Certified Staff
- Vortex Certified Clean Agent Systems
- Licensed for Portable Fire Extinguishers
- Licensed for Dry and Wet Chemical Systems
- Licensed for Security Alarm Systems

PARTNERS

- Victaulic
- TYCO
- Pyrochem
- ANSUL
- Kidde
- Fike



FIRE STATION

Guard Against Underground Fires

One of our most notable Fire Suppression solutions is our patented Fire Station conveyor belt system. This solution grew out of the need for mining companies to protect against underground belt fires. Pillar worked closely with MSHA and mining executives to develop this system, meeting operator needs and state/federal regulations.

SERVICES

- UL Listed and FM Approved Components
- Easily Transported and Installed
- Little to no Modification Needed
- Minimum Conveyor Downtime
- Installation Services Available
- Training Services Available
- Compliant with NFPA code 13, per MSHA 75.1100

COMPONENTS

- Modular Brackets
 - All Conveyor Structure Types
- Conveyor-Mounted or Stand-Alone Starter Kit
 - Inspectors' Test & Drain
 - Flow Switch
 - Strainer with Flush-out
 - Audio/Visual Alarm
 - Belt Shutdown Contacts
- Test Manifold
 - Calibrated for Acceptance Testing



MANUFACTURED BUILDINGS



OVERVIEW

Site-Ready Solutions

Pillar's team of technicians and tradesmen goes beyond manufacturing buildings. We create customized buildings and internal systems using our experience, trusted materials such as heavy-duty steel framing, and diverse styles and designs to provide a solution for your distinct need.

APPLICATIONS

- Analyzer Buildings
- Compressor Buildings
- Instrument Air Buildings
- MCC Rooms
- Tower Equipment Shelters
- Field Security Offices
- Control Rooms
- Site Offices

SERVICES

- Custom Design
- Equipment Sourcing & Installation
- Site Prep & Placement
- Integration & Commissioning



UTILITY VEHICLES

EMERGENCY VEHICLES

A Faster Route to Safety

The EMU Ambulance came from an idea that a Pillar employee had one day while working at a mine. He saw a miner with head and back injuries being transported to the surface. The rough ride via mantrip caused the miner additional pain, and the driver had to slow down greatly to ease the pain. A vehicle better suited to this need saves time and gets injured miners the treatment they need much more quickly. Pillar has worked with mine safety managers and a federal mine inspector to develop vehicles specifically designed for use as an ambulance.

The EMU-ALR is a modified version of the popular EMU-LR (Low Rider), designed for 45" seams. The EMU-ALT is available for mines with a height of approximately 70" and above.

SPECIFICATIONS

Standard Model	Length	Width	Height	Max Passengers
EMU-ALT	124"	56.5"	60"	3
EMU-ALR	160"	60"	44"	3

CUSTOMIZED EMERGENCY VEHICLES

Base Vehicle Type

- Electric (48 Volt)
- Gas
- Diesel

Vehicle Feature Options

- Color
- Cab Accessories
- Winches
- Windshields
- Lighting
- Tireballs (Run-Flat Tires)

Accessories

- Multiple Apparatus Configurations
- Custom Designed, Task-Oriented Features

Every project has its own set of challenges. Contact Pillar Innovations to discuss how we can create the right vehicle for your job.



EMU-ALT



EMU-ALR



Custom Fire Rescue Truck



Custom Ambulance

UTILITY VEHICLES

CUSTOM VEHICLES

Task Specific Builds

Pillar Innovations specializes in customizing utility vehicles. If you need a vehicle unique to our standard builds, we'll provide the features that fit your needs on the chassis of your choice: diesel, gas, or electric. Whether it be an ambulance, fire truck, or other specialty vehicle, we'll work with you to design a custom build that will get the job done.

Pillar also provides Kimtek firefighting apparatus on various Polaris UTV chassis. Our various configurations include emergency lighting and any other customized accessory. We'll create the perfect configuration to meet your needs.

SPECIFICATIONS

Base Vehicle Type

- Electric (48 Volt)
- Gas
- Diesel

Vehicle Feature Options

- Color
- Cab Accessories
- Winches
- Windshields
- Lighting
- Tireballs (Run-Flat Tires)

Accessories

- Multiple Apparatus Configurations
- Custom Designed, Task-Oriented Features

Every project has its own set of challenges. Contact Pillar Innovations to discuss how we can create the right vehicle for your job.



Custom Diesel Vehicles



Custom Projects from Render to Build



Custom Firefighting Apparatus



Custom Firefighting Apparatus

EMU

Electric Mine Utility Vehicles

The Pillar EMU will revolutionize the way you think about electric mine vehicles. The EMU is not a re-manufactured golf cart; it’s a purpose-built utility vehicle designed to stand up to the rigors of everyday mine duty. From moving material to aiding in the transport of injured miners, the EMU is easily configured to handle a multitude of tasks. So leave the carts to the caddies and jump on an EMU.

SPECIFICATIONS

Model Specs (All Vehicles)	
Powertrain	30 HP 48V Regen Motor
Transmission	On Demand True AWD
Front Suspension	MacPherson Strut 8" Travel
Rear Suspension	Dual A-Arm IRD 9" Travel
Ground Clearance	10"
Range	10-18 miles in underground conditions
Charge Time	8-12 hours from complete discharge
Top Speed	25 mph

Vehicle	Length	Width	Height	Max Passengers	Payload
LT	108"	56.5"	60" or 73"	2	1000 lbs
LT-4	147"	56"	73" *	4	1000 lbs
LR	129"	60"	44"	2	1000 lbs
LR-4	160"	60"	44"	4	1000 lbs

*custom heights available upon request



EMU BATTERY OPTIONS

Wet Cell, Lead-Acid Battery (Standard)

- 10-18 miles on one charge in underground conditions
- On-board, 110 VAC charger
- 8-12 hour recharge time

AGM Battery

- Sealed, Maintenance-free
- 10-18 miles on one charge in underground conditions
- On-board, 110 VAC charger
- 8-12 hour recharge time

NexSys Battery

- Sealed, Maintenance-free
- 10-18 miles on one charge in underground conditions
- Approximately 150 lbs. reduced vehicle weight
- Requires off-board, standalone charger (220-600 VAC)
- Approximately 2 hour recharge time

NexSys Battery in Removable Battery Packs

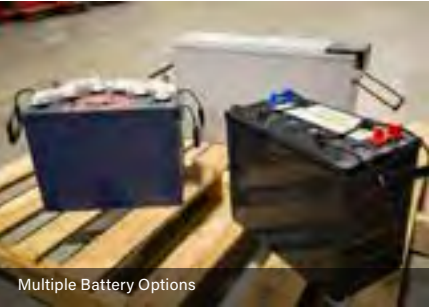
- Change packs for continuous operation

EMU ACCESSORIES

- Cabs
- Winches
- Windshields
- LED Lighting
- Tireballs (Run-Flat Tires)

PARTS AND SERVICES

Pillar Innovations maintains a well-stocked warehouse of vehicle parts to keep you running and eliminate machine down-time. We offer emergency parts delivery services, so you get the parts you need, fast. Additionally, our technicians - trained and experienced in vehicle repair - are ready to perform underground and field service when you need it.



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