JEFF ROBERTSON

P.E., S.E. PRINCIPAL

EDUCATION

B.S. Civil Engineering

University of Arizona

1994

PROFESSIONAL AFFILIATIONS

- Structural Engineers Association of Arizona
- Structural Engineers Association of Alaska
- National Council of Structural Engineers Association

PROFESSIONAL REGISTRATIONS

- Structural Engineer (34634), Arizona
- Structural Engineer (AELT 14347), Alaska
- Civil Engineer (59932), California
- Professional Engineer (98751), Florida
- Structural Engineer (028464), Nevada
- Professional Engineer (27140) , New Mexico
- Professional Engineer (E-88389), Ohio
- Professional Engineer (140131), Texas
- Structural Engineer (12925401), Utah

PROFILE

Mr. Robertson has over 30 years of experience in structural engineering from design to management of design teams and is CEO of ennovative. He is a seasoned executive level engineer with an expertise in buildings of all construction materials, sizes and uses. He has delivered innovative and efficient designs in the most challenging tower locations in the world – Alaska.

WORK EXPERIENCE

COMMUNICATION TOWERS AND INFRASTURUCTRE

GCI PROJECTS

Extensive work with GCI as part of the Q Engineers Team, providing structural engineering for tower and tower infrastructure projects.

Scope of work includes:

- Tower Structural Analysis (SA) for new equipment mounting.
- Tower Mounting Analysis (MA) for new fixture mounting.
- Tower strengthening of overstressed elements such as legs or bracing.
- Tower Foundation Design.
- Shelter analysis and strengthening for new equipment.
- New structures such as stair platforms, generator platforms, access platforms including foundations.
- Structural Review of modulars and prefabricated buildings.

These sites include but are not limited to:

- Toksook Site
- Pilot Station
- Goodnews Bay
- Kwigilingok
- Russian Mission UUI
- Nondalton

ALASKA POWER AND TELEPHONE

Engineer of Record for several towers and tower infrastructure projects throughout southeast Alaska. These projects included helicopter landing platforms, fuel storage, tower foundations and other supporting equipment.

These sites include:

- Burnett Mountain Tower
- Kasaan Mountain Tower
- High Mountain Tower

LUMEN PARK SENIOR HOUSING – ANCHORAGE, ALASKA

Provided the engineering for the foundations and insulated floor slab for a new standalone prefabricated metal building structure. The foundation system was a shallow concrete footing and grade beam assembly on a gravel pad on permafrost soils. The floor slab design incorporated pits, steps, and trenches for the sewage facility equipment.

HABITAT FOR HUMANITY Housing - ANCHORAGE, ALASKA

This project is the development for a high-density residential community. The construction consists of light wood framing, SIP wall panels, insulated concrete form (ICF) foundations and above-grade walls. The buildings consist of single family and duplex configurations. Details are tailored to accommodate the volunteer labor used exclusively in construction.

TURNAGAIN CROSSING 6-PLEX & BISTRO - ANCHORAGE, ALASKA

Provided construction documents for this $3.5 million mixed use development, which is comprised of two buildings; a 4,400 square foot bistro and 9,000 square foot, 6-plex over garages serving the units on one side, and open parking stalls allocated for the bistro on the other side. The structural systems for 6-plex consists of two stories of light-framed wood walls, engineered wood roof and floors supported by a podium structure. The podium structure consisted of high-load wood diaphragm, engineered wood floor joists and steel transfer beams supported by masonry walls and steel columns. The podium's design was challenging because the parking layout dictated the masonry wall and steel column layout, which did not allow the two stories of wood framed construction to align with the podium's structure so many load transfer conditions were necessary

UAA KPC EMS AND NURSING LAB RENOVATIONS - ALASKA

Provided the structural engineering for an existing University of Alaska facility to be reorganized based on new programming and current curricular needs. The structural scope includes a site condition assessment, evaluation of structurally deteriorated wood members and structural modifications as needed for the reconfiguration of classroom, office, and common area spaces.

UAA ALLIED HEALTH SCIENCES RENEWAL PHASE 1 (2ND FLOOR RENOVATIONS) - ALASKA

Provided full structural design services for an approximate 4,600 square foot remodel which upgrades classroom space to meet the needs of advancing technology and student body. Structural support and coordination were needed for a new interior folding partition, overhead X-ray machine, projector screens, and miscellaneous mechanical and electrical floor penetrations. Seismic restraint was also provided for the partition and equipment.

UAA MAT-SU SCIENCE LAB ADDITION - ALASKA

This project involved constructing a new structural masonry exterior wall to enclose an existing covered storage area attached to the current science lab building. The completed project featured an expanded laboratory classroom for the University of Alaska. Structural support for new lab equipment, mechanical systems, and new openings in existing structural masonry walls were also included in this remodel and expansion.

UAA KPC EMS AND NURSING LAB RENOVATIONS - ALASKA

The UAA KPC Career Services Technology Center is an approximately 16,000 square-foot, two story steel structure that is currently in design. The primary use for the facility will be to train graduate students with "state of the art" equipment and instrumentation for process technology in both a classroom and laboratory setting. To enhance the students learning environment, the architectural theme for the facility is industrial which mimics the students' future workplace. The structural systems for much of the facility will remain exposed and will be an integral part buildings architectural theme.Special care will be given to the layout and detailing of the structural system in order to keep the systems both structurally sound and visually pleasing.

UAA SPORTS COMPLEX CONCESSIONS ADDITION - ALASKA

This project included the design of a new freestanding 250 square-foot concessions booth over existing locker rooms.Light-gage steel was selected for the structural framing and lateral bracing, for economy and ease of installation.Careful consideration was given to minimize seismic and occupancy load impacts to the existing structure and to avoid potentially costly retrofit work.

AURORA SQUARE TOWNHOMES – ANCHORAGE, ALASKA

Provided the engineering for the foundations and insulated floor slab for a new standalone prefabricated metal building structure. The foundation system was a shallow concrete footing and grade beam assembly on a gravel pad on permafrost soils. The floor slab design incorporated pits, steps, and trenches for the sewage facility equipment.

DISCOVERY PARK CONDOMINIUMS - ANCHORAGE, ALASKA

Discovery Park Condominiums is a planned four building complex with three 30-unit buildings and one 26-unit building. Each building is a three-story wood framed structure with a full basement parking garage and structural steel framing for the first floor. The wood framed structure was designed to allow prefabrication and rapid construction.

RURAL CAP 7-PLEX, ANCHORAGE, ALASKA

Provided structural engineering for a two-story, seven-unit residential building. Special consideration was given to overall project costs and efficient structural systems were selected such as a shallow frost protected foundation. This building is a conventionally wood framed structure.

KARLUK MANOR, ANCHORAGE, ALASKA

This project is for the non-profit organization RurAL Cap and is utilizing a design/build delivery format.This facility will be a hotel style temporary residence for homeless adults seeking rehabilitation, counseling support and housing while working through addiction issues. The structure is an existing two story conventionally wood framed structure that is being remodeled. The building is being updated to meet current code requirement for seismic design.

UAA MAT-SU COLLEGE JALMAR KERTTULA BUILDING MECHANICAL UNIT UPGRADE - ALASKA

This project required engineering analysis of existing open-web steel roof joists, to support a new rooftop mechanical unit. Jeff performed the analysis and specified retrofits to the existing joists to support the new loads. Jeff also provided the design for new structural steel framing at new penetrations in the existing roof deck.

EAFB FITNESS CENTER – ELMENDORF AFB, ALASKA

The Elmendorf Air Force Base Fitness Center Addition is a 52,000 square foot, two-story structure. The building provides free weight training, resistance training, specialty exercise rooms, six racquetball courts, an elevated 1/8 mile running track, and administrative offices. This $17 million design/build project required extensive collaboration and coordination between the owner, contractor, and design team.Specialty details for this project consisted of super-elevated turns of the running track, exposed architectural and structural elements, and seismic separation of the new structure from the adjacent structure.

F-22 WEAPONS LOADING CREW TRAINING HANGAR – ELMENDORF AFB, ALASKA

The F22 Weapons Loading Crew Training Hangar is the final project in support of the F22 squadron infrastructure at Elmendorf AFB. This facility is an 18,200 square foot structure with a construction cost of approximately $11 million. The structure is a single-story steel frame on conventional concrete foundations. The seismic resisting system is a buckling restrained braced frame (BRBF) system, which produces significant savings in the foundation design.

ANCHORAGE MUNICIPAL LIGHT AND POWER – ANCHORAGE, ALASKA

Unit Three Replacement Inlet and Exhaust Stack Platform – Successfully managed and designed the structural system to support platform framing and coordinated with ML&P vendors and contractors. Design of structural support framing and seismic bracing was provided for power generation equipment for components such as cable trays, switchgear, electrical fuses, and equipment associated with the gas turbine installation.

(NSB) ANAKTUVUK POWER PLANT (PAR) – ANAKTUVUK, ALASKA
(NSB) ATQUSUK POWER PLANT (PAR) – ATQUSUK, ALASKA

Site visits were conducted at the above referenced power plants to review the structural condition and to document any structural deficiencies or structural deterioration. Written reports were produced documenting the finding.

SCHLUMBERGER DRILLING SUPPORT BUILDING – PRUDHOE BAY, ALASKA

This new 26,100 square-foot building will service Drilling and Measurement operations for Schlumberger Technology Corporation, located in Dead Horse, Alaska. The building will replace an existing facility and centralize their operations. Structural systems include structural steel framing supported on either steel pile or concrete foundations designed for permafrost. Special consideration was taken for column free space, bridge cranes, jib cranes, nuclear storage/calibration equipment, mix occupant use, and permafrost.

TDX GAS TURBINE POWER PLANT – DEAD HORSE, ALASKA

This new power plant project consisted of a steel pipe pile foundation system and a structural steel floor framing system approximately three feet above finished exterior grade. The pre-engineered metal building was attached to the foundation and floor system.Design of the foundation and floor system was coordinated with the pre-engineered metal building fabricator.

HERITAGE HOTEL SEISMIC UPGRADE - CHRISTCHURCH, NEW ZEALAND

The Heritage Hotel is a historically significant structure located in the heart of downtown Christchurch, New Zealand. Heavily damaged in the earthquakes in 2011 and 2012 a complete seismic upgrade was required for this 13-story cast in place concrete building constructed in 1970. Jeff provided an innovative design using fiber reinforced polymer (FRP) and conventional methods to strength the beams and columns of the structure and create new ductile beam to column connections. This building was the first to get approved using FRP and pass the scrutiny of the new building committees assigned to oversee the strengthening of the damaged structures in the downtown area of Christchurch.

COMPANY OPERATIONS FACILITY - FT. WAINWRIGHT, ALASKA

The Company Operations Facility (COF) is an $11 million, 13,000 square foot facility for the Aviation Task Force Phase 2 at Fort Wainwright. This project was delivered as a Fast Track Design Build project with structural and civil plans and specifications completed and approved by the Corps of Engineers prior to the remaining design team completing the design development package.The structural building system is a pre-engineered metal building supported by reinforced concrete foundations. The project was designed and coordinated with other members of the design team using building information modeling (BIM) software.

MAGTEC MAINTENANCE SHOP – DEAD HORSE, ALASKA

Provided the structural design for a new 8,000 square foot heavy equipment maintenance shop to service oil and gas industry equipment. The structure consisted of drilled freeze-back steel piles, concrete grade beams, concrete slab-on-grade, and pre-engineered metal building superstructure.

BETHEL READINESS CENTER - BETHEL, ALASKA

The Bethel Readiness Center is a new facility as part of the national program to construction military ready facilities throughout the country. This facility is a 22,760 square foot structure with a construction budget of approximately $14 million. This structure is a single-story steel frame structure supported on shallow concrete foundations on a prepared refrigerated building pad.

F-22 SQUADRON OPERATIONS/AMU/6-BAY HANGAR - ELMENDORF AFB, ALASKA

A Fast Track Design was done for this design-build project delivery of a three story, 42,400 square foot structure of support space with offices, lockers, briefing/assembly areas, and specialty spaces for training and weapons storage and column free, 37,657 square foot, six aircraft hangar. The aircraft hangar is equipped with overhead crane and fall protection systems. This is the first structure at Elmendorf to be designed utilizing the latest in seismic resisting technology, the buckling restrained braced frame (BRBF.) This system will provide a greater level of reliability and function in a large seismic event and has been proven to be more economical than conventional systems.This structure required design to meet progressive collapse requirements.

MAGTEC MAN CAMP PILE FOUNDATION – DEAD HORSE, ALASKA

This project is a two-story, 58 bed, 18,000 square foot, module man camp on the North Slope. Jeff was brought onto the team to “Fast-Track” the design of the pile foundation. Within the month of being, Jeff had delivered the construction documents and pile were being installed and the modules set. A month after the start of construction the building was occupied.

LITTLE DIOMEDE K-12 SCHOOL – LITTLE DIOMEDE, ALASKA

This project consisted of a site visit to review the structural integrity of the existing buildings that have experience large ground settlements, deterioration from exposure to weather and review options for building repairs and extensive remodeling.Innovative and creative solutions were developed to address the challenges presented by the rural location of the project. Structural repairs were developed that will provide a system to relevel the buildings, allow for future releveling that may be needed, repaired and replaced severely damaged wood framed decks and roof structure, and brought the buildings into compliance with the current building code.

JESSE LEE HOME - SEWARD, ALASKA

This project consisted of a structural review of the historic Jesse Lee Home in Seward, Alaska. These structures were constructed in 1926 and have been abandoned since the 1964 Good Friday Earthquake. Our review consisted of temporary structural strengthening to stabilize the buildings and review them for potential historic preservation, rehabilitation, and occupancy. A site visit was conducted to review the existing conditions and a written report, photographs and tabled explanation of findings was provided.

UNIVERSITY OF ARIZONA TECHNOLOGY CAMPUS - SIERRA VISTA, ARIZONA

This $4.25 million building was appropriated by the Arizona Legislature. A groundbreaking ceremony was held on the four-acre site adjacent to the existing campus at 10 a.m. on June 6, 2001. The Technology Building includes 10 classrooms, two of which will be equipped with interactive television (ITV). The building also houses 30 faculty offices, a learning resource center with a capacity of 100 students and 150-person meeting room.

AEROMEDICAL SERVICES / MENTAL HEALTH CLINIC - ELMENDORF AFB, ALASKA

The $19.8 million Aeromedical Services and Metal Health Clinic is a 31,400 square foot two-story structure that is connected to the existing EAFB hospital with an enclosed connector to allow medical personnel and patients access to both facilities. This facility provides flight medicine, public health, mental health clinics and support areas. It also includes an ambulance garage and covered connector to the hospital.The structural building system is steel framing supported by reinforced concrete foundations. The seismic resisting system is a buckling restrained braced frame. All the braced frames are located within interior walls and were coordinated with a user defined interior layout. This system selection provides cost savings, future flexibility and reliability versus more common moment frame systems used in medical facilities. This project required elevated seismic performance with seismic importance factors.

SELDOVIA VILLAGE TRIBE WELLNESS CENTER - SELDOVIA, ALASKA

Provided the construction documents for this new 8,250 square-foot, two-story clinic building, connected by a covered walkway to the existing tribal wellness facility. The structure is conventional wood framing, with prefabricated roof trusses and I-joist floor framing, supported on insulated concrete form (ICF) foundations. Special care was taken to detail the heavy timber entry features to mimic the adjacent existing building’s character. The project was delivered by CM/GC method, with Jeff providing complete construction administration services, which included structural observations.

BEAR EDUCATION AWARENESS SANCTUARY (BEARS) CENTER PORTAGE VALLEY, ALASKA

This new facility will be approximately 12,000 square feet of educational space to bring the users and visitors an up-close and personal experience with Alaskan bears at the Alaska Wildlife Conservation Center. The structure will include a large theater seating auditorium, interpretive and interactive displays, meeting/educational classrooms, and general building function spaces.This project engages the design concept for sustainable design, utilizing exposed architectural and structural components that are recycled, reused and eco-friendly. Other structural aspects of the project include elevated viewing board walks that run along and through the animal enclosures and combined steel/fabric free standing canopies that cover animal viewing areas.

ALASKA RAILROAD FREIGHT SHED RENOVATION/SOA FOREST SERVICE OFFICES -ANCHORAGE, ALASKA

Provided the structural engineering strengthening to current codes for this building. The 1941 Alaska Railroad Freight Shed is a 700-foot-long heavy-timber structure in Anchorage's historic Ship Creek District. Jeff added concealed timber "over-framing" and exposed structural steel braced frames without detracting from the cadence of the original timber framing. The result is a modern energy-efficient building that meets LEED criteria and preserves the integrity of this historic landmark.

REPLACEMENT FAMILY HOUSING – FORT RICHARDSON, ALASKA

This residential design-build project consisted of new housing for Ft. Richardson. It included three subdivisions of mixed unit combinations that varied from duplexes to quad-plexes. The buildings included three-bedroom, four bedroom and five-bedroom floor plans with varying roof lines and exterior finishes to provide a neighborhood atmosphere and provide a more modern architectural development. This design build delivery project allowed the contract to begin foundation work early as a fast track foundation package to the Corp of Engineers.

TDX GAS TURBINE POWER PLANT – DEADHORSE, ALASKA

This new power plant project consisted of a steel pipe pile foundation system and a structural steel floor framing system approximately three feet above finished exterior grade. The pre-engineered metal building was attached to the foundation and floor system. Design of the foundation and floor system was coordinated with the pre-engineered metal building fabricator.

UNALAKLEET WATER TREATMENT PLANT IMPROVEMENTS – UNALAKLEET, ALASKA

Provided the engineering for the foundations and insulated floor slab for a new standalone prefabricated metal building structure. The foundation system was a shallow concrete footing and grade beam assembly on a gravel pad on permafrost soils. The floor slab design incorporated pits, steps, and trenches for the sewage facility equipment.

VILLAGE AT 4302 MOUNTAIN VIEW DEVELOPMENT (CIHA) - ANCHORAGE, ALASKA

This multi-family development will create a neighborhood community complex of five living unit structures. The buildings consist of four duplex style dwellings and one four-plex dwelling. The project is approximately 22,100 square feet of two and three story conventionally wood framed buildings supported on concrete foundations. Special design consideration and value engineering with the design-build team for the site and building retaining walls that are required for development of the steep site.

POWER CONOCOPHILLIPS WELL HOUSE – NORTH SLOPE, ALASKA

Completed the prototypical design for a new well house for the gas and oil industry of the North Slope of Alaska.The design consists of an all composite structural system, including the beams, columns, wall panels, handrails, and ladder. A precast concrete foundation provided the resistance to the wind loads on this light structure. The structure is 15 feet square x 21 feet tall. Innovative features include crane lifting devices for removing the intact structure from its foundation for maintenance, simple foundation locking system and hydraulically operated roof panels that open for truck access.

MCKINLEY TOWERS – ANCHORAGE, ALASKA

Engineered the seismic strengthening of an existing fourteen-story cast in place concrete structure built in the 1950's and damaged in the 1964 earthquake. Standard retrofitting techniques proved exceptionally costly and included thick steel columns the full height of the structure, which would substantially alter the appearance of this historic tower. Instead, Jeff strengthened the 14-story building from within, using ultra-thin sheets of fiber-reinforced polymer fabric that can attain the strength of steel within 24 hours.The project received an Award of Excellence for Innovation from the Concrete Repair Institute.

ST. ELIAS LONG TERM CARE HOSPITAL – ANCHORAGE, ALASKA

St. Elias Long Term Care Hospital is a 67,300 square-foot, two-story steel structure. The seismic load resisting system was specifically configured to accommodate the architectural function and to conceal the entire bracing system. A three-dimensional computer model of the structure was constructed for engineering analysis, which provided steel weights for several different framing systems early in the design process. This allowed the design/build contractor to make decisions at the concept design phase based on economy, efficiency, and overall function. The estimated construction costs for this project is $19 million.

MAGTEC MAN CAMP PILE FOUNDATION – DEAD HORSE, ALASKA

This project is a two-story, 58 bed, 18,000 square foot, module man camp on the North Slope. Jeff was brought onto the team to "Fast-Track" the design of the pile foundation. Within the month of being, Jeff had delivered the construction documents and pile were being installed and the modules set. A month after the start of construction the building was occupied.

SOUTHEAST VOCATIONAL TRAINING CENTER – SITKA, ALASKA

This project is a new adult educational facility that is approximately 4,000 square feet. The construction cost was approximately $1.0 million. This is a conventional wood framed structure with classic Alaskan architectural design features such as exposed wood framing and pitched roofs. Jeff selected a shallow frost protected foundation (SFPF) system to minimize excavation and allow for monolithic placement of the footings and interior slab on grade.

SCHLUMBERGER SEWAGE TREATMENT BUILDING – PRUDHOE BAY, ALASKA

Engineered the foundations and insulated floor slab for a new standalone prefabricated metal building structure. The foundation system was a shallow concrete footing and grade beam assembly on a gravel pad on permafrost soils. The floor slab design incorporated pits, steps, and trenches for the sewage facility equipment.