



PDC INC. ENGINEERS

Transforming Challenges into Solutions



Client:

State of Alaska
Department of Transportation & Public Facilities
Northern Region

Location:

Deadhorse, Alaska

Project Completion:

In Progress

PDC Involvement:

- Civil Engineering
- Structural Engineering
- Mechanical Engineering
- Electrical Engineering
- Environmental Documentation & Permitting

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**Deadhorse Airport
ARFF/SREB/FSS and SSB**

Deadhorse lies 5 miles south of the Prudhoe Bay oilfields on Alaska's North Slope, with access only by road up a 500-mile, partially paved highway or else by air. The Deadhorse Airport, a State-owned, 6,500-foot airstrip, provides vital supply and commuter transport services. Year-round operation of the airport is essential to work force crew changes and medical evacuations for the oilfields, as well as for transport of vital cargo and supplies that cannot await the long overland haul.

Deadhorse Airport's combined Airport Rescue and Firefighting Facility (ARFF)/Snow Removal Equipment Building (SREB)/Flight Service Station (FSS) was constructed in 2000 to allow State and Federal agencies to share the high costs of construction and maintenance of support facilities in the Arctic. The ARFF/SREB/FSS included:

- Multiple vehicle bays for emergency response vehicles at the airport and for maintenance operations
- Office/training area, restroom/locker area, living/sleeping area, and storage areas
- Control room for flight operations, electronics room for testing and storage, and weather balloon station
- Living quarters consisting of individual sleeping rooms with private restrooms and a large kitchen/lounge area for group activities

Life/safety code issues for the mixed-use occupancies were challenging. Rated construction provides separation between the shop, office, and living quarters. Permafrost at the site posed a challenge that PDC met with a creative active refrigeration system solution.

In 2005, DOT&PF contracted with PDC to add two more work bays, eight dormitory rooms, and a sand storage bay. The original ARFF/SREB/FSS was built on a pad that had been constructed in the mid- to late 1970s. The existing ARFF nearly covered the entire pad, so a new pad had to be constructed for the addition. Bridging the old and new pads was not recommended for this essential facility due to concerns about the possibility of differential settlement.

A separate building was designed to house the requested additions, with a corridor link to allow access between the two buildings. The proposed alternative reduces the potential for structural damage by connecting the new building to the older one with a corridor designed to accommodate any differential settlement between the two foundations.