



REMOTE CONTROLLED OPERATIONS

Northwest Demolition is a leader in the use of remote controlled equipment in extreme risk environments. Such remote equipment allows tasks to be performed productively while removing the operator from the hazardous situation.

We have custom modified a range of equipment ranging from smaller units weighing a few thousand pounds to large 150,000 lb frontline shear equipped demolition excavators. The equipment can be operated line of sight via radio or industrial bluetooth with the operator at a safe distance away from the machine. The equipment is also fitted with CCTV cameras allowing the units to be controlled from a pressure controlled operations center or other safe remote location. Most of these units are also able to be manned conventionally where the situation is safe.

Applications for this technology include:

- UXO and explosive removal projects
- Demolition projects where the site is unsafe for human occupancy as a result of unstable surfaces, potential energy release or other physical hazards.
- Confined spaces and hazardous atmospheres
- Environment with chemical or radiological hazards
- Working around structures where collapse is imminent

EXAMPLE REMOTE CONTROLLED PROJECTS:



Mining Facilities Demolition (Nevada – International Mining Company)

Northwest Demolition was selected as part of a large mine expansion and modernization project. The project included the demolition and removal of significant facilities including crusher complexes, maintenance installations and other infrastructure. A portion of the work was required to be done with unmanned remote controlled demolition equipment due to hazardous site conditions.



Kwajalein Atoll Metals Removal / Revetment Construction Project (Kwajalein Atoll – KFS (Missile Command))

Northwest Demolition was contracted for a metals removal and revetment construction project on a remote atoll close to the equator. The revetment includes over 1,850 LF of exposed shoreline adjacent to several historic Navy dump sites. Over 28,000 tons of armor stone has been barged onto the island for placement with a specialized long-stick excavator. The robust engineered design involves the notching or cutting of a 'keyway' into the reef substrate to anchor the stabilization structure in place.

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The metals removal component has presented additional challenges. Much of the metals debris was burned after dumping, causing it to fuse together in a thick 'slag' material. Additionally, materials of explosive concern (MEC) have been found during excavation operations. To perform the work safely, and efficiently, Northwest Demolition has mobilized a specialized fleet of excavators, equipped with ballistic glass and steel reinforcement. As work proceeds into more dangerous areas, the excavators are operated remotely from a safe distance via a complex system of mounted cameras, GPS systems, and a custom-installed remote conversion kit. Operators in the remote operation will be housed in a "blast box" designed to withstand overpressure from explosives.



Keauhou Hotel Demolition (Kona, HI – Kiewit)

For the systematic demolition of this 7-story concrete structure, Northwest Demolition employed specialized equipment to minimize manual labor and personnel exposure to hazards.



The land-based demolition employed the use of a high-reach excavator to bring two thirds of the structure down safely and effectively. On the more challenging side, the over-water work utilized Remotely Operated Demolition Robots, allowing for a controlled demolition, and preventing any demolition debris from entering the ocean habitat. Significant environmental parameters also required the use of a debris catchment system and a working scaffold platform to be constructed beneath the lowest level.

Robotic Excavator Design & Construction (Multiple Locations, Ash Grove Cement)

Northwest Demolition was retained by a long term customer, Ash Grove Cement to design a remote controlled unit to enter cement reclaimer domes to clear material in an event of a mechanical breakdown of the system. This work is inherently dangerous due to atmospheric conditions and the presence of unstable high-walls that form inside the dome. This unit would eliminate the need to put personnel in harms way.



Our team designed a multipurpose excavator based unit capable of remotely entering the dome with a long front boom capable of reaching 60' with a light weight bucket and cement vacuum suction attachment.



The remote control capacities of the machine allow full wireless operation of the units ISO controls and also are able to run auxiliary electric over hydraulic circuits. It is fitted with (3) CC TV conventional cameras for the operator to remotely view as well as (1) infrared camera for low visibility environments.

