



Research Sites
Restoration Ltd



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Harwell Key Achievements

Introduction

Harwell is the birthplace of the UK's nuclear industry.

Today its international reputation for pioneering excellence continues with the decommissioning and environmental restoration of the site, and the creation of a world-class science and innovation campus.

In 1946 the Harwell site became Britain's Atomic Energy Research Establishment. Most of the nuclear reactors and research facilities on site were built in the 1940s, 1950s and 1960s and continued to operate until the 1990s.

Since then work has been in progress to safely decommission and dismantle redundant facilities, manage radioactive wastes and restore the site in a way that is safe, secure and environmentally responsible.

The designated area managed and operated by RSRL forms part of the Harwell Science and Innovation Campus. As land on the site is delicensed, it is released for commercial development as part of the campus, ensuring that a valuable legacy is left.

Hangars Seven and Eight



Before

Two of Harwell's three remaining former RAF Hangars, known as Hangars Seven and Eight have been demolished as part of Harwell's demolition programme.

During

Hangar Seven was home to one of the country's first particle accelerators and the birthplace of synchrotron accelerators in the UK. Hangar Eight's most famous facility was GLEEP, (Graphite Low Energy Experimental Pile), the first reactor in Western Europe.

After

There must be few hangars in the country which housed so many scientific breakthroughs and contributed so much to the understanding of nuclear physics.

Western Storage Area



Before

The Western Storage Area was used for the licensed storage, treatment and landfill burial of hazardous chemical wastes. The wastes were contained in 24 unlined disposal pits.

During

The work on site took less than one year and was completed seven months ahead of schedule. Twenty-four burial pits were remediated and all non-radioactive wastes were disposed to a final location.

After

A replacement groundwater treatment plant was commissioned to continue the prevention of further contamination to the underlying aquifer.

Decommissioning of B351, Chemical Engineering Building



Before

B351, Harwell's chemical engineering building, housed reactors, plant and equipment for research into nuclear materials.

During

Key challenges included many tonnes of hazardous substances and radioactive materials in a vast building segregated into separate experiments, for which only limited records were available.

After

The building was demolished in 1997 and after removal of the basement, the land will be ready for further development in line with the site strategy.

Southern Storage Area



Before

The Southern Storage Area (SSA) was known locally as the 'bomb dump', as the site was originally used for munitions storage during the Second World War as part of RAF Harwell. Taken over in 1946 and used for the storage and handling of chemical and low level radioactive wastes.

During

Key challenges were to clear the site of chemical and radioactive pollutants, while remaining vigilant for an unknown quantity of military explosives. To ensure that the operation was conducted to the most stringent safety standards as the SSA bordered a local school.

After

The successful completion of the biggest and most complex clean-up of its kind in the UK. The unique nature of this decommissioning challenge required the development of project teams with sub contractors that harnessed a wide range of experience and skills, which have subsequently set new standards in environmental restoration.

Restoration of Sutton Courtenay Water Works



Before

The water treatment works that supplied Harwell with potable water until 1995 was located about 10km from the main Harwell site. Old gravel pits on the site had been used for the disposal of inert demolition wastes and water treatment sludge.

During

Key challenges of the project included stakeholder perception of the end condition of the site as safe and suitable for its proposed future usages, whilst managing the need to import 1,200 lorry loads of soil and stone for part of the work.

After

Two major engineering projects were completed successfully at the water works and the waste disposal site was restored with minimal adverse impact. The waterworks buildings were demolished and a potential amenity area created from sludge and waste disposal sites.

Decommissioning of Building 220 Laboratories



Before

The main part of B220 was built to carry out research and development work with radioactive materials. Work was also undertaken on a wide range of nuclear materials including extensive work on plutonium.

During

Some of the key challenges associated with the project included decommissioning a large alpha active pressurised suit area and the cutting up of 160 redundant alpha gloveboxes used to support the plutonium research and development programme.

After

Several redundant alpha active laboratory suites were successfully converted into office space following the completion of Stage Two decommissioning. Further areas of the building will be decommissioned in the future.

Legacy Wastes



Before

Legacy waste processing has been and still is a major focus of Harwell's clean-up process. The legacy waste programme at Harwell includes the recovery of waste cans from storage tubes, some of which have been stored for up to 50 years.

During

Retrieval Machine 2, which is Harwell's second retrieval machine, will recover remote handled waste cans.

After

The waste is being characterised and loaded into stainless steel drums which will be processed in the Waste Encapsulation Plant. The legacy waste will be stored on site, until a national disposal facility becomes available.

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