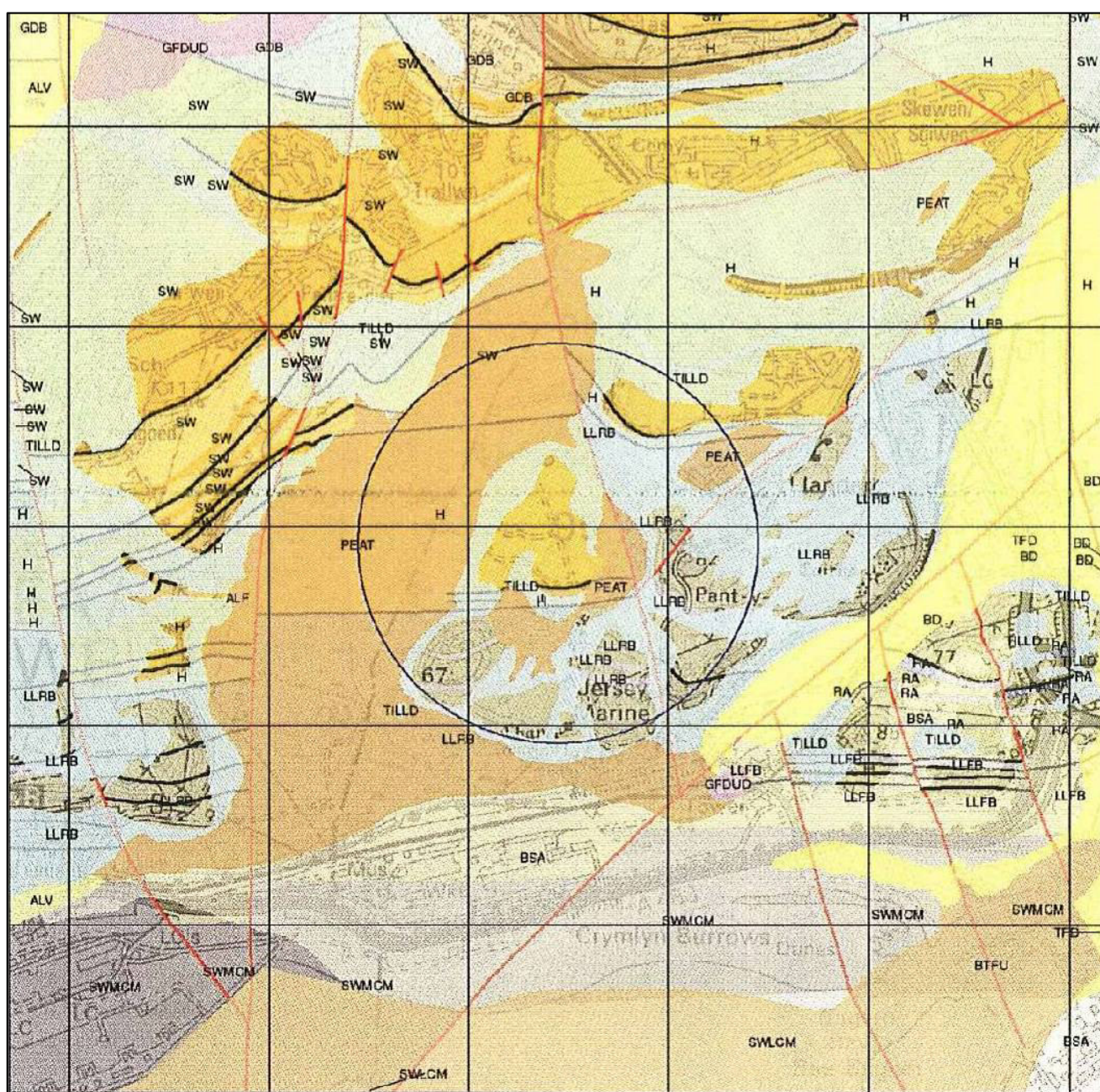


Coed Darcy Urban Village, Swansea
Explosive Ordnance Threat Assessment Report

Annex D: Combined "Surface Geology" Map



Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	BD	Brithdir Member	Mudstone, Siltstone and Sandstone	Westphalian D - Westphalian D
	SW	Swansea Member	Sandstone	Westphalian D - Westphalian D
	GDB	Grovesend Formation	Sandstone	Westphalian D - Westphalian D
	SW	Swansea Member	Mudstone, Siltstone and Sandstone	Westphalian D - Westphalian D
	BD	Brithdir Member	Sandstone	Westphalian D - Westphalian D
	H	Hughes Member	Sandstone	Westphalian D - Westphalian D
	H	Hughes Member	Mudstone, Siltstone and Sandstone	Westphalian D - Westphalian D
	GDB	Grovesend Formation	Mudstone, Siltstone and Sandstone	Westphalian D - Westphalian D



37 Riverside, Sir Thomas
Longley Rd,
Rochester, Kent, ME2 4DP
Tel. +44 (0) 1634 296757
www.bactec.com

Report No:

9741 TA

Source: Envirocheck

Client:

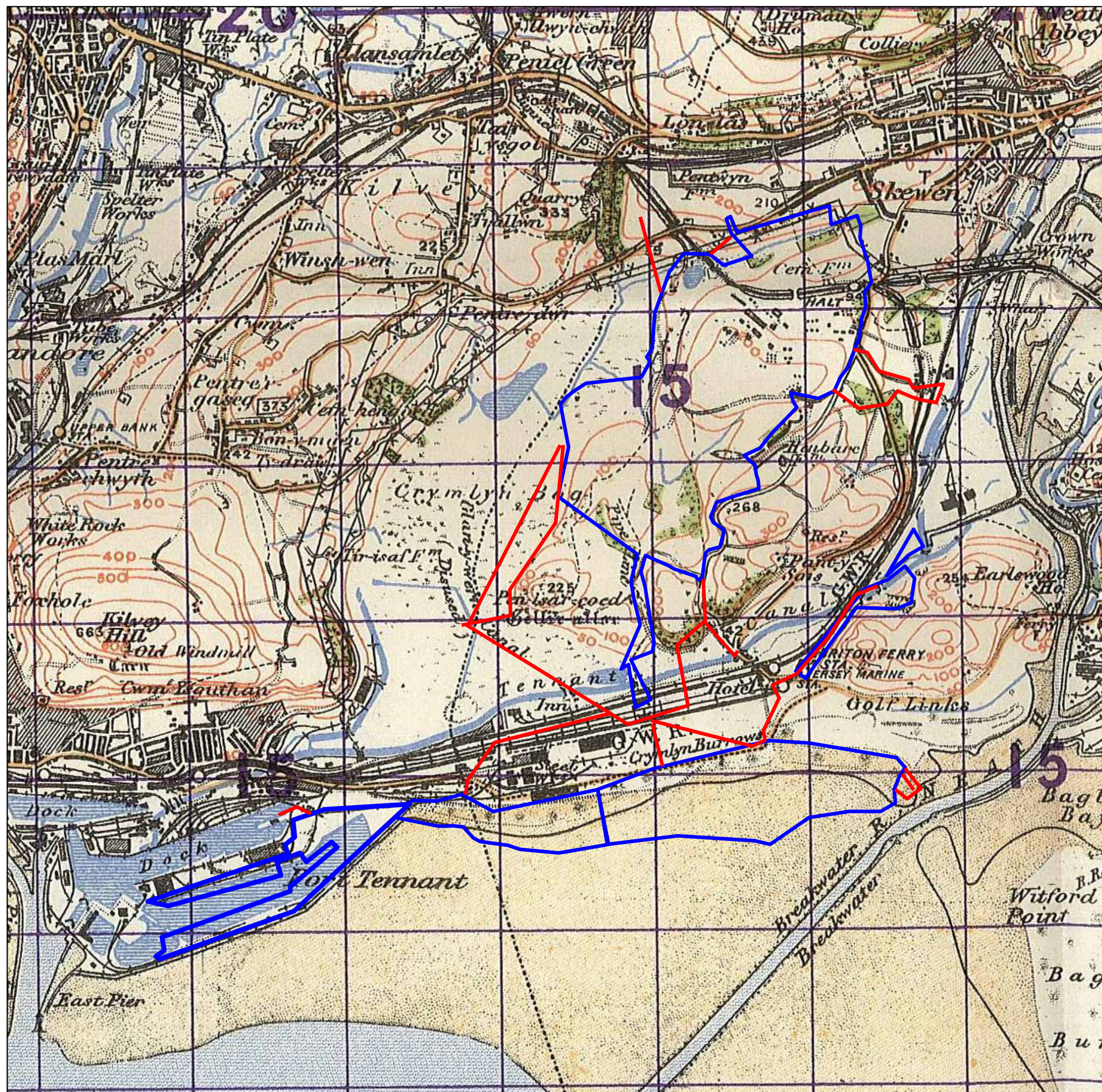
Atkins Limited

Project:

Coed Darcy Urban Village, Swansea

Coed Darcy Urban Village, Swansea
Explosive Ordnance Threat Assessment Report

Annex E: WWII-Era Cassini Map



— Development Area

— Pipeline Route



Ref: 9741 TA

Client: Atkins Limited

Source: © Crown copyright.

Project: Coed Darcy Urban Village, Swansea

Coed Darcy Urban Village, Swansea
Explosive Ordnance Threat Assessment Report

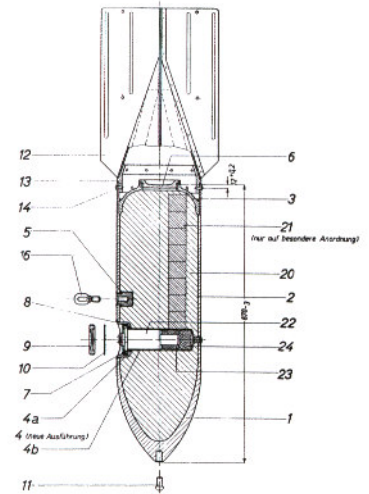
Annex F: German Air-Delivered Ordnance

SC 50

Bomb Weight: 40-54kg (110-119lb)
 Explosive Weight: c25kg (55lb)
 Fuze Type: Impact fuze/electro-mechanical time delay fuze
 Bomb Dimensions: 1,090 x 280mm (42.9 x 11.0in)
 Body Diameter: 200mm (7.87in)
 Use: Against lightly damageable materials, hangars, railway rolling stock, ammunition depots, light bridges and buildings up to three stories.
 Remarks: The smallest and most common conventional German bomb. Nearly 70% of bombs dropped on the UK were 50kg.



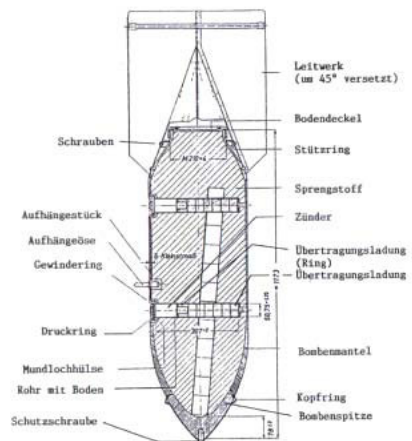
Minus tail section



SC-50 JA (Güteklasse 1)

SC 250

Bomb weight: 245-256kg (540-564lb)
 Explosive weight: 125-130kg (276-287lb)
 Fuze type: Electrical impact/mechanical time delay fuze.
 Bomb dimensions: 1640 x 512mm (64.57 x 20.16in)
 Body diameter: 368mm (14.5in)
 Use: Against railway installations, embankments, flyovers, underpasses, large buildings and below-ground installations.



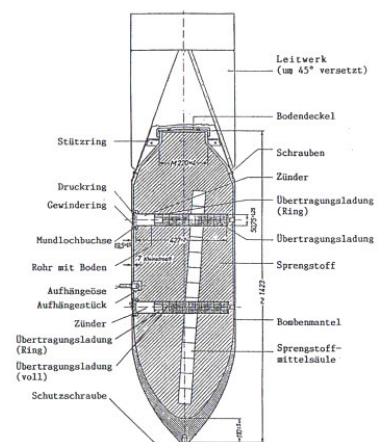
SC-250 JA (Güteklasse I)

SC 500

Bomb weight: 480-520kg (1,058-1,146lb)
 Explosive weight: 250-260kg (551-573lb)
 Fuze type: Electrical impact/mechanical time delay fuze.
 Bomb dimensions: 1957 x 640mm (77 x 25.2in)
 Body Diameter: 470mm (18.5in)
 Use: Against fixed airfield installations, hangars, assembly halls, flyovers, underpasses, high-rise buildings and below-ground installations.



50kg bomb included for size comparison (see above)



SC-500 J (Güteklasse I)



37 Riverside, Sir Thomas
 Longley Rd,
 Rochester, Kent, ME2 4DP
 Tel. +44 (0) 1634 296757
 www.bactec.com

Report No:

9741 TA

Client:

Atkins Limited

Project:

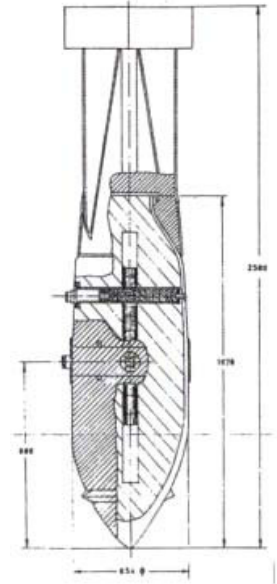
Coed Darcy Urban Village, Swansea

Source:

Bactec International Limited

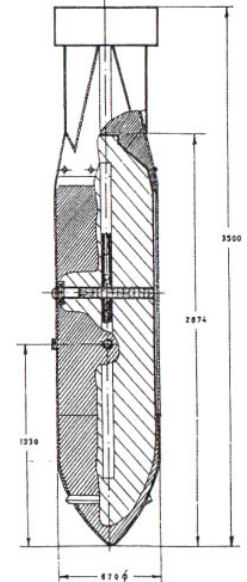
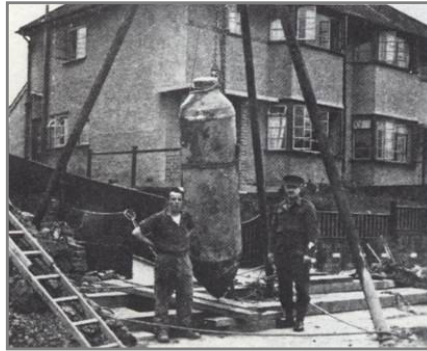
SC 1000

Bomb weight: 993-1,027kg (2189-2,264lb)
Explosive weight: 530-590kg (1,168-1,300lb)
Fuze type: Electrical impact fuze
Bomb dimensions: 2,580 x 654mm (101.6 x 2.5in)
Body diameter: 654mm (25.75in)
Use: Against unarmoured sea targets and land targets
Remarks: Known as the 'Hermann'



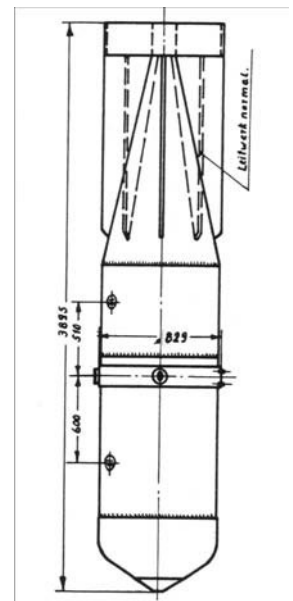
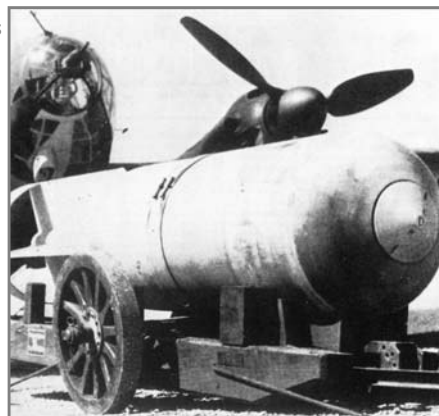
SC 1800

Bomb weight: 1,767-1,879kg (3,896-4,142lb)
Explosive weight: 1,000kg (2,205lb)
Fuze Type: Electrical impact fuze
Use: Against building complexes and large merchant vessels
Remarks: Known as the 'Satan'



SC 2500

Bomb Weight: Bomb weights have been quoted as 1,950kg (4,300lb) and 2,500kg (5,512lb)
Explosive Weight: 1,700kg (3,748lb)
Fuze Type: Electrical impact fuze
Bomb Dimensions: 3,895 x 829mm (153.3 x 32.6in)
Body Diameter: 829mm (32.6in)
Use: Against building complexes and merchant vessels.
Remarks: The SC 2500 has an aluminium with a welded head and tailpiece. bomb is very similar to the SB 500. The main difference is that the SC is made of aluminium while the SB is made of steel. Known as the 'Max'. It should be noted that this device is very rare.



37 Riverside, Sir Thomas
Longley Rd,
Rochester, Kent, ME2 4DP
Tel. +44 (0) 1634 296757
www.bactec.com

Report No:

9741 TA

Source:

Bactec International Limited

Client:

Atkins Limited

Project:

Coed Darcy Urban Village, Swansea

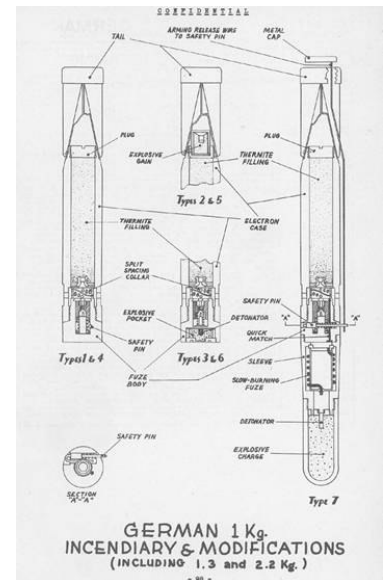
INCENDIARY BOMBS

1kg Incendiary Bomb

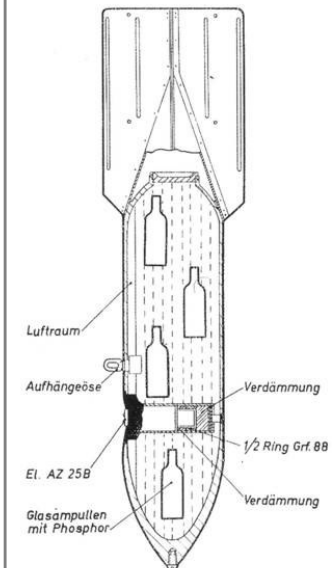
Bomb weight: 1.0 and 1.3kg (2.2 and 2.87lb)
 Filling: 680gm (1.3lb) Thermite
 Fuze type: Impact fuze
 Bomb dimensions: 350 x 50mm (13.8 x 1.97in)
 Body diameter: 50mm (1.97in)
 Use: As incendiary – dropped in clusters against towns and industrial complexes
 Remarks: Jettisoned from air-dropped containers. Magnesium alloy
 case.
 Sometimes fitted with high explosive charge



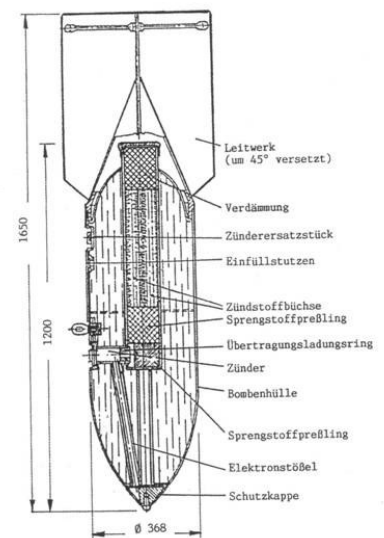
1. Scaffold pipe
2. Incendiary 1kg bomb
3. Incendiary bomb recently found on site in UK

**C-50 A Phosphorous Bomb**

Bomb weight: c41kg (90.4lb)
 Explosive weight: 0.03kg (0.066lb)
 Incendiary filling: 12kg (25.5lb) liquid filling with phosphor igniters in glass phials
 Fuze type: Electrical impact fuze
 Bomb dimensions: 1,100 x 2800mm (43.3 x 11in)
 Body diameter: 200mm (2.87in)
 Use: Against all targets where an incendiary effect is to be expected
 Remarks: Early fill was phosphorous/carbondisulphide solution poured into the mixture
 incendiary

**Flam C-250 'Oil Bomb'**

Bomb weight: 125kg (276lb)
 Explosive weight: 1kg (2.2lb)
 Flammable weight: 74kg (163lb)
 Filling: Mixture of 30% petrol and 70% crude oil
 Fuze type: Super-fast electrical impact fuze
 Bomb dimensions: 1,650 x 512.2mm (65 x 20.2in)
 Body diameter: 368mm (14.5in)
 Use: Often used for surprise attacks living targets, against troop barracks and industrial
 installations
 Remarks: Thin casing – not designed for ground penetration



37 Riverside, Sir Thomas
 Longley Rd,
 Rochester, Kent, ME2 4DP
 Tel. +44 (0) 1634 296757
 www.bactec.com

Report No:

9741 TA

Client:

Atkins Limited

Project:

Coed Darcy Urban Village, Swansea

Source:

Bactec International Limited

Coed Darcy Urban Village, Swansea
Explosive Ordnance Threat Assessment Report

Annex G: UXB Incident Press Articles

International

FRIDAY, 16 SEPTEMBER, 1994 23



RESCUE workers search for survivors after a Second World War bomb exploded at a building site in Berlin, killing three people and injuring at least eight others.

A fire brigade spokesman said he feared the final death toll could be higher. One worker was still missing, believed to be trapped under a machine. "We've

Blown up by history

found human remains 100 metres away but we can't tell if they belong to the dead already found," the spokesman said.

The blast, set off by drilling work on Frankfurter Allee, one of east Berlin's busiest avenues, trapped

workers under building machinery and sent huge chunks of concrete tumbling through the air.

A large office block was being built on the site of the explosion which sent shoppers scrambling for shelter and paralysed

dense afternoon traffic. One eyewitness said: "There was a bang, then silence, and then it started raining stones and dirt."

Dozens of cars within a 250-metre radius were wrecked and the top two floors of a nearby apartment block caved in.

Radio reports claimed that the total number of injured stood at 14.

**Reuters Press Release
23.10.2006**

More than 60 years since the end of World War II, construction workers still frequently unearth unexploded bombs and it is not uncommon for whole city districts to be cordoned off and even evacuated while bomb disposal experts defuse them.

Indeed, just last week (16.10.2006), some 22,000 people were evacuated from their homes in Hanover when three World War II bombs were discovered.

Allied pilots rained nearly 2 million tons of explosives on Germany during the war. Landmines, hand grenades, mortar bombs and anti-tank devices from the fighting on German soil at the end of the war are also found, and authorities say it will take decades before the country is cleared of duds.

Between 400 and 600 bombs are discovered a year in the state of North Rhine-Westphalia alone, where the heavily industrialized Ruhr region was a major target for Allied fighter pilots.

Three workers were killed and 17 people injured in Berlin in 1994 when a wartime bomb exploded during construction work. In 2003 in the Austrian city of Salzburg, two people were killed while attempting to defuse a 250-kilogram bomb.

[cro/Reuters/AP](#)

**DPA Press Release
25.10.2006**

Bomb disposal experts defused an unexploded World War II bomb on Tuesday (24.10.2006). The 75-kilo device was discovered on the grounds of the Audi car plant in the southern city of Ingolstadt during excavation work along a rail track, police said.

The bomb, which was buried three meters under the ground, was examined by experts who rendered it harmless.

Another 250-kilogramme bomb dropped from British Royal Air Force bomber was defused near the A352 motorway near the northern city of Hanover on Monday (23.10.2006).

And on Saturday (21.10.2006), a 70-kilogramme wartime bomb was destroyed in a controlled explosion near the A12 motorway, east of Berlin, after 1,000 people living in the vicinity were evacuated.

In one of Germany's biggest-ever bomb-disposal operations, 22,000 people left their homes in Hanover last week while experts removed the detonators from three World War II bombs.



37 Riverside, Sir Thomas
Longley Rd,
Rochester, Kent, ME2 4DP
Tel. +44 (0) 1634 296757
www.bactec.com

Report No:

9741 TA

Client:

Atkins Limited

Project:

Coed Darcy Urban Village, Swansea

Source:

Bactec International Limited



UXB Incident in Austria in 2004.

Top Left: Similar piling rig & dump truck as those involved in this incident

Top Right: Piling rig and dump truck after the explosion of a WWII Allied UXB. Notice crater at bottom left

Left: Emergency teams aiding the injured operator

Bottom Left: Remains of the piling rig



37 Riverside, Sir Thomas
Longley Rd,
Rochester, Kent, ME2 4DP
Tel. +44 (0) 1634 296757
www.bactec.com

Report No:

9741 TA

Source:

Bactec International Limited

Client:

Atkins Limited

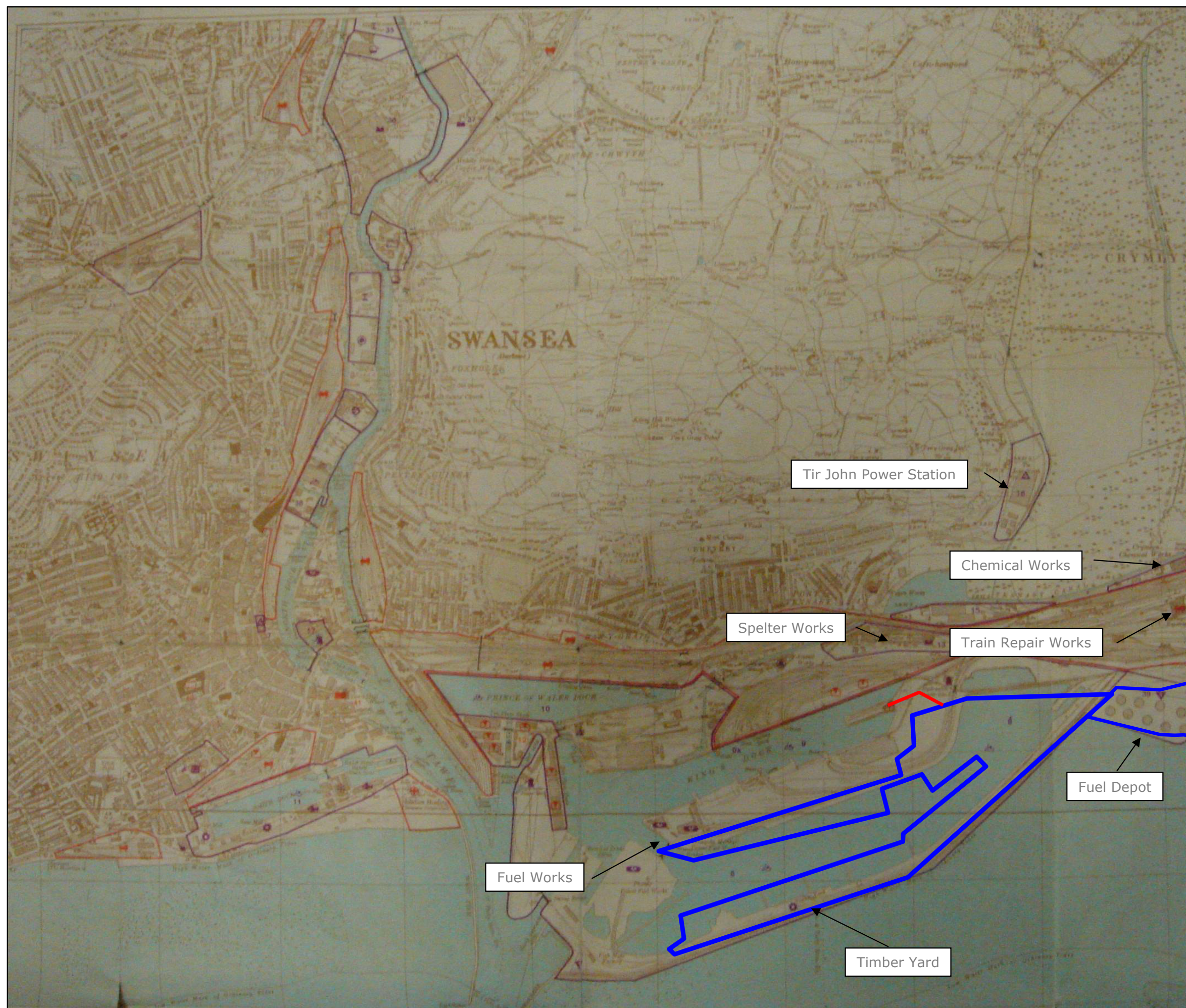
Project:

Coed Darcy Urban Village, Swansea

Coed Darcy Urban Village, Swansea
Explosive Ordnance Threat Assessment Report

Annex H: Luftwaffe Target Maps





— Development Area — Pipeline Route

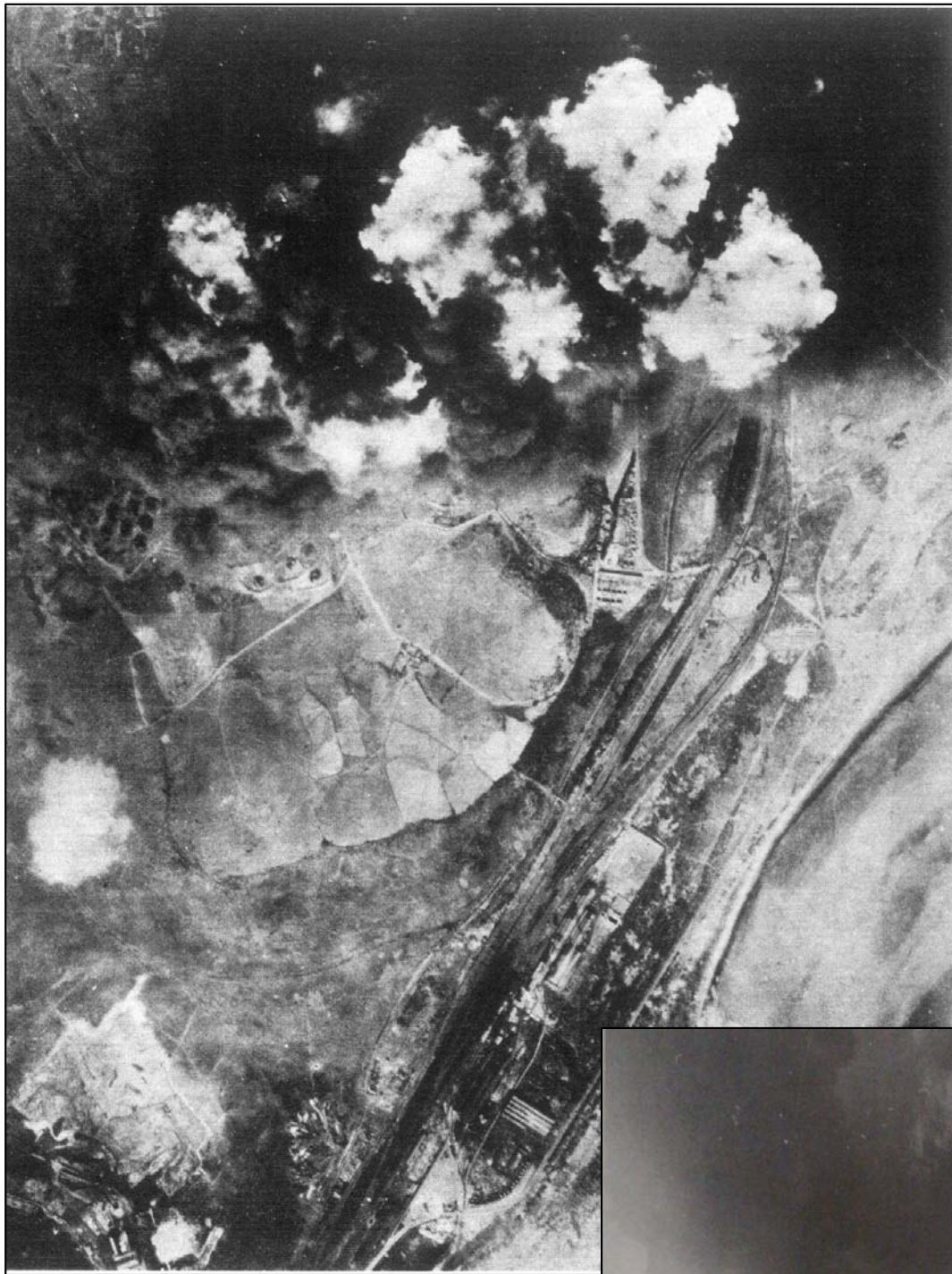


Ref: 9741 TA
Source: West Glamorgan Archive Service

Client: Atkins Limited
Project: Coed Darcy Urban Village, Swansea

Coed Darcy Urban Village, Swansea
Explosive Ordnance Threat Assessment Report

Annex I: Photographs of Llandarcy Oil Refinery Following Heavy Air-Raid



Photographs of aftermath of daylight raid on
Llandarcy Oil Refinery, Summer 1940



37 Riverside, Sir Thomas
Longley Rd,
Rochester, Kent, ME2 4DP
Tel. +44 (0) 1634 296757
www.bacter.com

Report No:

9741 TA

Client:

Atkins Limited

Project:

Coed Darcy Urban Village, Swansea

Source:

Ramsey, W., The Blitz Then and Now, Volume 2, Battle of Britain Prints International Limited. 1988