Temple Park Leisure Centre, South Shields

Desk Study Report

South Tyneside Council

Solmek Report Number S111123

December 2011

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Temple Park Leisure Centre, South Shields

Desk Study Report

1 INTRODUCTION AND SCOPE OF WORKS

1.1 Solmek were instructed by South Tyneside Council to undertake a desk study on a parcel of land at Temple Park Leisure Centre, South Shields, Tyne and Wear. The proposals include the refurbishment of the existing Pool Area at the Leisure Centre.

1.2 The following steps may be required in the investigation and remediation of potentially contaminated land:

- Phase 1: Desk Study
- Phase 2: Intrusive Investigation
- Phase 3: Remediation Statement
- Phase 4: Validation Reports

1.3 Phases 1 and 2 are generally required in the redevelopment of most sites. Phases 3 and 4 are subject to the findings of the initial stages. This report represents Phase 1 of the site investigation.

1.4 The purpose of this desk study is to evaluate the ground conditions of the site based on existing information and to plan the scope of the subsequent investigation. The objectives and planned outcomes of the desk study are:

- to assess the impact of local authority guidance on the investigation
- to identify existing features on and near the site
- to evaluate the historical and environmental setting of the site
- to assess the likelihood of finding contamination, its nature and extent
- to identify associated key contaminants
- to identify sensitive receptors and define source – pathway – receptor relationships (conceptual model)
- to identify relevant geotechnical parameters
- to assess any potential sources of ground gas
- to assess the potential risk of shallow mining
- to identify constraints to the investigation, i.e. site access and health and safety considerations

1.5 This assessment has been undertaken with due regard to contaminated land guidance, issued by the Royal Institution of Chartered Surveyors (RICS) and BS 10175: 2001, *"Code of Practice for the Investigation of Potentially Contaminated Land"*. Selected elements of BS 5930: 1999 *"Code of Practice for Site Investigations"* have also been included.

2 REGULATORY AND PLANNING CONTEXT

2.1 The Town and Country Planning Regime is the principal means by which contamination is dealt with by the Local Authority. Contaminated land is a material planning consideration and contamination assessments are required on land that may be potentially contaminated.

2.2 The Buildings Regulations (2000) also state that *"precautions shall be taken to avoid danger to health and safety caused by substances found on or in the ground covered by the building"*. A site investigation is frequently required to satisfy the requirements of building control.

3 SITE DESCRIPTION

3.1 The preliminary site inspection, as recommended in BS 5930 and BS 10175, was undertaken on Wednesday 30th November 2011. Location maps and selected plates are presented in Appendix 1. The site is centred at the approximate Ordnance Survey Co-ordinates 437180E, 563950N, within Temple Memorial Park, South Shields.

3.2 The area of redevelopment lies within Temple Park Leisure Centre and forms the Swimming Pool and Changing area of the complex (Plates 1, 2 and 3). This is located within the southern half of the Leisure Centre and comprises an "L" shaped building. The southern half of the building is of masonry construction with masonry and glass panelling in the northern half. At the time of the walkover some of the glass panels were broken (Plate 5).

3.3 A metal stairway provides emergency access to the swimming pool area on the western elevation. The access door is present at pool water level approximately 2-3m above ground level and at the base of the glass panelling (Plate 5). The stairway lies adjacent to a covered, elevated walkway linking the Pool Area to the Gymnastic Centre further to the west. The topography of the site varies; the land on the western and eastern sides of the Pool Area is lower than the south. The land rises up toward the south and south west from the pool base level to approximate pool water level. A series of vent chimneys are located on the eastern elevation (Plate 4) which is accessed down a tarmac service roadway beneath the main entrance to the leisure centre. An electrical substation and chemical store is also located in this area and forms part of the retaining structure for the land to the south of it.

3.4 The site is set wholly within Temple Memorial Park and comprises public open space over undulating grassed parkland intersected with footpaths. An all weather Sports Pitch is present to the south east with a Playground to the east. A parking area lies to the north west of the Playground.

3.5 There are no surface water features near the site.

3.6 There were no obvious signs of contamination noted during the site walkover.

4 SITE HISTORY

4.1 In order to determine the history of the site, previous editions of Historical Maps and Ordnance Survey Plans were inspected. Selected map extracts are presented in Appendix 2.

4.2 Table 1 presents a summary of the history of the area which includes plots from 1862 to 2011. The summary focuses on the historical land uses and changes relevant to the site and the proposed end use. Measurements are taken from the centre of the site and all distances quoted are approximate.

OS MAP	SCALE	ON SITE FEATURES	OFF SITE FEATURES
1862	1:10,560	The site lies within a series of open fields labelled "North Field".	The surrounding 700m comprises mostly fields. A building labelled North Pasture lies 400m to the west of the site. Harton and Whitburn Colliery is shown 900m to the north west with a railway line over 1km to the west. A series of limestone quarries lie over 650m to the east of the site, The largest quarry is labelled Cleadon Quarry over 1km east.
1874-86	1:2,500	A small stream is shown to cross the eastern boundary in a northerly direction from a water feature 150m to the south east.	No changes.

1897	1:2,500	No changes.	A Rifle Range is depicted 100m to the west. No other changes.
1898	1:10,560	No changes.	A school and South Shields Union Workhouse are located 500m to the north west. Residential growth around Harton Colliery has occurred and within Tyne Dock over 1km north west.
1915-16	1:2,500	No changes.	Rifle Range no longer shown. No other changes.
1921	1:10,560	No changes.	A Hospital is shown 500m north west of the site. There has been further expansion of housing over 500m to the north west and in Harton over 500m to the north east. No other changes.
1938	1:10,560	No changes.	A Church is depicted 100m to the south east adjacent to the newly constructed King George Road. Extensive housing development has occurred over 100m to the east and to a lesser degree over 1km to the north west.
1942	1:2,500	The site remains undeveloped but now forms part of Harton Moor Golf Course.	The Church is labelled as St Cuthbert's and a Clubhouse is shown to the south of it. No other changes.
1951-52	1:10,000	No changes.	Housing is shown fully developed beyond 100m to the east. New buildings are depicted 400m to the south west. Allotment Gardens are located 500m to the south of the site. A Nurses Home is labelled near to Harton Institution and General Hospital.
1956-59	1:2,500	The site is unchanged however the golf course is no longer labelled. An area of scrub vegetation lies in the south west corner of the site.	The golf clubhouse is now a Church Hall. A Civil Defence Control Centre is located 240m to the north east. No other changes.
1967-68	1:10,000	No changes.	A refuse tip is shown 250m to the south west. A new housing estate is shown 500m to the south west. The hospital is now labelled as South Shields General Hospital.
1970	1:2,500	The stream along the eastern boundary is no longer shown. The site now lies within Temple Memorial Park.	John Reid Road lies 100m to the north of the site. No other obvious changes.
1976-77	1:10,000	No changes.	Harton Colliery is no longer shown 1km to the west of the site. All associated railway lines have also been removed. Residential development has occurred further to the north of John Reid Road along with a series of schools.
1983	1:1,250	The Leisure Centre is shown to be present in the south of the site	A series of path networks are depicted to the south of the Leisure Centre.
1986-87	1:10,000	A Car Park lies in the north east corner of the site. The remaining area to the north west is undeveloped.	A Sports Ground lies immediately south east of the site and the land to the south is labelled as Playing Fields. A residential area is now shown in place of the former Harton Colliery to the west.
1993	1:1,250	The Leisure Centre has been extended to the north and a road network surrounds the western and northern flanks.	A Playground lies to the east.
2000	1:10,000	No changes.	Expansion of South Tyneside Hospital has occurred 300m to the north west. No other obvious changes.

2006	1:10,000	No changes.	A Fire Station is shown 250m to the west of the site along John Reid Road. No other changes.
2011	1:10,000	No changes.	No changes.

TABLE 1: SUMMARY OF THE SITE HISTORY

4.3 The site remained a field with a small stream along the eastern boundary until the 1940's when it became part of Harton Moor Golf Course. The golf course was no longer labelled by the mid 1950's and the site became known as Temple Memorial Park in the 1970's. The stream was no longer shown around this time period. The Leisure Centre was constructed sometime between the late 1970's and the early 1980's and was extended in the 1990's.

4.4 The earliest maps show the site to lie within a series of fields with limestone quarries 650m to the east and collieries over 900m to the west. A Rifle Range was developed to the west iof the site around the late 1800's but was removed by the early 1900's. A period of steady residential development occurred from the 1920's and 1930's along with new road infrastructure which continued into the 1980's. John Reid Road was constructed sometime around the late 1960's. A refuse tip was shown on mapping from the late 1960's, 250m to the south west of the site, but this was not present on subsequent maps.

5 ENVIRONMENTAL CONTEXT

5.1 The services of Envirocheck were used to establish the pertinent environmental records relating to the site. This information, which is presented in Appendix 3, replaces much of the information traditionally provided by the Environment Agency. Selected relevant information is summarised as follows. Measurements are taken from the centre of the site and all distances quoted are approximate.

Landfill and Waste

5.2 The Envirocheck Reports shows three historical landfills on the site. Details from the Environment Agency website indicate that the three sites are Temple Memorial Park No1, Temple Park No2 and Temple Park No3. The first waste received was in January 1957 for the Temple Memorial Park No1 site and the last input date is given as January 1994. Temple Park No2 first received waste in January 1950 but no details of the last waste input is given. No details are given for Temple Park No3.

5.3 Temple Memorial Park No1 received inert, industrial, commercial and household wastes. Temple Park No2 received inert, industrial and commercial wastes and Temple Park No3 received industrial, commercial and household wastes. The Temple Memorial Park No1 site has undergone some gas measures to control methane.

5.4 There are four registered landfill sites listed in the Envirocheck Report, these lie 200m to the south west of the site with dates ranging from October 1977 to April 1984. These may include the sites mentioned above. All licences are listed as being surrendered, lapsed or cancelled.

5.5 There are six other waste facilities located over 360m from the site. These include one BGS landfill, one historical landfill, three licensed waste management facilities and one waste transfer site.

Regulated Industries

5.6 There are no Local Authority Pollution Prevention and Control Enforcements, Integrated Pollution Controls, Integrated Pollution Prevention and Controls, Prosecutions Relating to Authorised Processes or Controlled Waters, Explosive Sites, Control of Major Accident Hazards Sites (COMAH), Notification of Installations Handling Hazardous Substances

(NIHHS) or Planning Hazardous Substance Consents or Enforcements within 1km of the site.

5.7 There are ten Registered Radioactive Substances located beyond 397m which all relate to South Tyneside Hospital to the north west of the site.

5.8 There are no Local Authority Pollution Prevention and Controls within 500m of the site.

Industrial Land Use

5.9 The Envirocheck Report identifies current industrial land use in relation to the site. There are numerous active entries, the closest being 573m north west at South Tyneside Hospital.

5.10 There are two open Fuel Stations sites within the Envirocheck Report. These are located 668m south east on King George Road (Murco) and Moor Lane (Jet) 924m north of the site.

Environmentally Sensitive Areas.

5.11 No entries are shown under the heading of Environmentally Sensitive Areas, National Parks, Nitrate Sensitive Areas, Nitrate Vulnerable Zones, Ramsar Sites, Areas of Outstanding Natural Beauty or Sites of Special Scientific Interest (S.S.S.I.).

5.12 An area of Adopted Green Belt lies 615m to the south of the site.

5.13 For full details see Envirocheck Report (Appendix 3).

6 GEOLOGY, GROUNDWATER & SURFACE WATER

Geology

6.1 Inspection of British Geological Survey Sheet NZ36NE (1:10,000 Series: Solid & Drift Edition) was undertaken. The mapping shows the superficial geology to consist of Upper or Pelaw Clay. The map also shows that the site lies within an area of domestic waste.

6.2 The solid geology underlying the site is expected to comprise Middle Coal Measures rocks (Mudstone and sandstone). There are no faults in the area.

6.3 The Hebburn Fell coal seam is conjectured to outcrop to the north and east of the site and potentially dip beneath it towards the south and west. The Dean coal seam is conjectured to lie 300m to the west and dip away from site.

6.4 There are no BGS recorded mineral sites within 800m of the site.

Previous Drilling Records

6.5 The BGS database indicates a number of boreholes have been drilled in the area prior to construction of the Leisure Centre. The ground conditions around the building generally consist of domestic waste, clay and ash to depths of up to 2.4mbgl. It appears that the domestic waste, clay and ash mark the full extent of the fill materials. The natural deposits generally comprised layers of clay, silty clay and sand to depth of up to 7.0mbgl over boulder clay to at least 12.0mbgl.

Geological Hazards

6.6 The Envirocheck Report states that no risk is posed by ground dissolution or shrinking and swelling clay hazards. A very low risk is given for landslide, collapsible ground, compressible ground and running sand hazards. For full details see the Envirocheck Report (Appendix 3).

Radon Risk

6.7. The HPA-RPD-033 Indicative Atlas of Radon in England and Wales Map 19 shows the site lies in an area where between 1 and 3% of homes are at or above the radon action level. The BRE Radon – Guidance on Protective Measures for New Buildings Map 19 shows that no radon protective measures are necessary in the construction of any new dwellings or extensions.

Mining

6.8 The Envirocheck Report states that the site is in an area affected by coal mining. A Coal Mining Report has been obtained, dated 6th December 2011. The report indicates that there are six worked seams beneath the site at depths of between 315 and 448mbgl, the last date of working being 1969. The shallowest seam is the Yard which has a section of 190cm in the area, this was last worked in 1938.

6.9 There are no mine entries, tips or lagoons within 20m of the site. There have been no subsidence claims relating to the property over the last 10 years. The report concludes that old workings are present but all settlement is likely to have completed long ago. The report is presented in Appendix 3.

Ground and Surface Water

6.10 The Envirocheck Report shows that the underlying solid geology beneath the site is designated a **Secondary A Aquifer**.

6.11 The drift geology is designated as **Unknown.**

6.12 The site does not lie in a Source Protection Zone (SPZ). A Zone II (Outer Protection Zone) and Zone III (Total Catchment) SPZ lies 279m to the south east of the site.

6.13 There are no Discharge Consents within 1km of the site.

6.14 There are no Pollution Incidents into Controlled Waters within 900m of the site.

6.15 The Envirocheck Report states that no water abstraction licences are listed within 1km of the site.

Flooding

6.16 The Envirocheck Report states that the site is not in an area affected by previous flooding events.

6.17 There are no areas benefiting from flood defences or flood water storage areas within 1km of site.

7 PRELIMINARY GEOTECHNICAL ASSESSMENT

Relict Foundations and Made Ground

7.1 Given the history, previous buildings on the site and taking into account the published geology information, it is expected that made ground will be encountered across the site. The made ground is likely to consist of consolidated domestic waste products from the previous land filling operations mixed with clay and ash material. This is likely to be deepest around the southern extent of the pool building where the land is raised and shallowest along the eastern and western elevations.

7.2 The made ground may contain construction wastes with materials such as brick rubble, concrete, tarmac, glass, plastic, paper and card along with backfilled natural material. Asbestos may also be potentially present, given the dates of the previous filling operations.

7.3 A Phase 2 investigation would determine the type and extent of made ground.

Foundations

7.4 The natural ground is likely to comprise silty clays of varying strengths with occasional sand layers over possibly firm to stiff boulder clay. The depth of foundations will largely be dictated by the thickness of made ground across the site and depth of the boulder clay.

7.5 Based on the previous drilling records the boulder clay was proven across the site from depths of between 5.0 and 7.0mbgl. A piling option would appear the most suitable should the proposed loads be high. A shallower foundation option may be suitable if firm clays are encountered at shallower depth and the proposed loadings are relatively light.

Excavations and Groundwater

7.6 Excavations should be easily achievable by means of a normal excavator through the fill materials and clay/sand deposits. A breaker may be required for the hardstanding on the site and if relict foundations or other buried structures are encountered.

7.7 It is unlikely that groundwater will be encountered on site at relatively shallow depth. Perched groundwater may, however, be encountered within the made ground or on top of impermeable soil horizons. It should be noted that groundwater levels can be affected by rainfall, seasonal variations and in proximity to local dewatering schemes and ground water abstraction points.

Mining

7.8 The Hebburn Fell coal seam is conjectured to outcrop to the north and east of the site and potentially dip beneath it towards the south and west. The Dean coal seam is conjectured to lie 300m to the west and dips away from site. The Mining Report indicates that there are six worked seams beneath the site; the shallowest being the Yard which has a section of 190cm in the area, this was last worked in 1938.

7.9 There are no mine entries, tips or lagoons within 20m of the site. There have been no subsidence claims relating to the property over the last 10 years. The report concludes that old workings are present but all settlement is likely to have completed long ago.

7.10 A search of the Durham Mining Museum website showed that the nearby Harton Colliery shaft encountered three very thin (<0.1m thick) seams of coal from depths of between 30.0mbgl and 36.5mbgl. The shallowest potentially workable seam (0.8m in thickness) lies over 80.0mbgl. It is possible therefore that the Hebburn Fell seam may be too thin to have been worked. The overall risk of the development being affected by mining issues therefore appears to be low. However the Local Authority may require further information in terms of rotary drilling to confirm this.

8 PRELIMINARY CONTAMINATION ASSESSMENT

8.1 The desk study has revealed that the site has **potentially** been exposed to contamination due to the previous developments on the site and surroundings. There is the potential for contamination from land filling operations, comprising materials such as ash, brick rubble, tarmac, domestic waste and possibility asbestos.

Development Proposals

8.2 The proposals include the refurbishment of the existing Pool Area at the Leisure Centre.

Potential Priority Contaminants

8.3 It is recommended that a screen of potential priority contaminants should be tested for during a site investigation to confirm whether there is any contamination that may affect human health.

8.4 The testing should be based on guidance in CLR Report 8 "*Potential Contaminants for the assessment of Land*". The potential priority contaminants based on the sites history includes:

Inorganic Contaminants	Organic Contaminants
Arsenic, Boron, Cadmium, Chromium, Lead, Mercury, Nickel, Zinc, Selenium, Free Cyanide, Soluble Sulphate, pH, asbestos	Phenol, TPH (aromatic/aliphatic) and Speciated PAH (speciated).

TABLE 2: POTENTIAL PRIORITY CONTAMINANTS

Potential Hazards from Ground Gases

8.5 Ground gases such as carbon dioxide and methane can be classed as a form of contamination. Potential sources of ground gases include:

- Made Ground
- Quarries, Infilled Clay Pits & Infilled Ponds
- Underlying Natural Strata (alluvium, peat and chalk)
- Petrol re-fuelling sites (which also includes Volatile Organic Compounds)
- Landfill (on and off-site)
- Coal measures

8.6 Based on historical map evidence and consideration of the sites environmental setting Table 3 shows a preliminary comparison of *consequence* against *probability* where ground gas is considered a potential threat to human health.

PRELIMINARY GROUND GAS ASSESSMENT		
Potential Sources	***Potential Pathway***	***Receptor***
Hazardous mine gases from Coal Measures strata and land filling on site (CO_2, CO and CH_4)	Ingress and Accumulation into buildings from vertical and horizontal migration	Future residents of site are likely to include adults and children. Construction workers (in particular utility workers).
Made Ground (CO_2 and CH_4)	Ingress and Accumulation into buildings from vertical and horizontal migration	
Preliminary Comparison of Consequence verses Probability		
	Classification	***Justification***
Probability *(Based on Table 8.1, CIRIA C665, 2007)*	HIGH LIKELIHOOD	Former landfills on the site. Coal mining area. Possible ground gas from made ground.
Consequence *(Based on Table 8.2, CIRIA C665, 2007)*	MILD	Redevelopment of pool area. Transient receptors. Assumed gas control measures already in place.
	Risk	***Details***
Consequence vs. Probability *(Based on Table 8.3, CIRIA C665, 2007)*	MODERATE RISK	It is possible that harm could arise to a designated receptor from an identified hazard. Investigation is required to clarify the risk and remedial works may be required in the long term. *(Based on Table 8.4, CIRIA C665, 2007)*

TABLE 3: POLLUTION LINKAGES - GROUND GAS

9 PHASE TWO – INTRUSIVE INVESTIGATION WORK

9.1 Based on the information collated in this desk study a phase two intrusive investigation is recommended. The investigation should comprise a number of deep shell and auger boreholes around the periphery of the structure.

9.2 Due to the likely presence of landfilled materials beneath the site gas/groundwater monitoring pipes should be installed in a minimum of three boreholes to assess the shallow ground gas and water levels beneath the site. At least three monitoring visits will be required. However, if high or variable concentrations of ground gases are recorded, an extended period of monitoring maybe necessary.

9.3 Samples from the boreholes should be subject to a series of both geotechnical and chemical contamination analysis.

9.4 Site investigations are designed according to the type of development, the requirements of the Client, and recommendations in BS 5930 and BS 10175.

10 PRELIMINARY CONCEPTUAL MODEL AND RISK ASSESSMENT

10.1 The conceptual model (Table 4) collates the salient aspects of the site to form a model which should enable comparison after fieldwork and testing. This model identifies the potential pollution linkages that may influence the proposed development and geotechnical considerations.

10.2 The risk ratings are based on the current potential liabilities and likely potential future liabilities. The risks posed by the geotechnical and contamination aspects of the site will be revised following site works, and any mitigating action required added.

PRELIMINARY CONTAMINATION ASSESSMENT					
SOURCES	**DETAILS**	**RECEPTORS**	**PATHWAYS**	**DETAILS**	**RISK RATING**
Potential contamination in the made ground from previous land use.	Possible sources include: Possible construction, household, commercial waste such as ash, tarmac, brick rubble, plastic, glass and concrete. Possible asbestos. Site currently part of a Leisure Centre. Closest landfill/waste facility on site from 1950's.	Future users will be adults and children.	Dermal absorption	Proposed redevelopment of swimming pool area.	**LOW-MOD**
			Inhalation of soil/volatised compounds		
			Ingestion of soil		
			Contact with contaminated groundwater		
			Ground gas from vertical and horizontal migration	Ingress and Accumulation into structure.	**MOD (C665)**
		Construction workers and users of site during construction	Dermal absorption	Contact with made ground and groundwater during ground works Contact with dust during construction	**LOW-MOD**
			Inhalation of soil/volatised compounds		
			Ingestion of soil		
			Contact with contaminated groundwater		
		Users of surrounding sites	Dermal absorption	Contact with wind blown dust during construction	**LOW-MOD**
			Inhalation of soil/volatised compounds		
			Ingestion of soil		

		Vegetation	Uptake via roots and leaf surfaces	The proposals unlikely to include new areas of soft landscaping.	LOW
		Groundwater	Slow seepage or leaching of contaminants	Secondary A Aquifer. Not in a Source Protection Zone. Possibly perched groundwater.	LOW-MOD
		Surface Water	Slow seepage or leaching of contaminants	None in close proximity.	LOW
			Accumulation of contaminated sediments		
		Construction Materials	Direct contact	Foundations, buried structures and services anticipated on site.	LOW

PRELIMINARY GEOTECHNICAL ASSESSMENT		
FACTOR	**ON SITE DESCRIPTION**	**RISK RATING**
MADE GROUND	Made ground is expected to include construction materials such as household waste, industrial and commercial waste, brick rubble, tarmac, ash, concrete and possible asbestos.	**MOD-HIGH**
NATURAL SOILS	Superficial deposits are expected to comprise silty clay with sand over boulder clay.	**LOW**
SOLID GEOLOGY	Middle Coal Measures mudstone and sandstone.	**LOW**
MINING	Worked coal seams over 300mbgl. Possible thin unworkable seam beneath the site.	**LOW-MOD**
RADON PROTECTION	No radon protection measures required	**LOW**
SUBSIDENCE /GROUND STABILITY	No risk is posed by ground dissolution or shrinking and swelling clay hazards. A very low risk is given for landslide, collapsible ground, compressible ground and running sand hazards.	**LOW**
FLOODING SUCEPTIBILITY	No previous flooding incidents. There are no flood storage areas or flood defences located within 1km of site.	**LOW**

TABLE 4: PRELIMINARY CONCEPTUAL MODEL AND RISK ASSESSMENT

11 CONCLUSIONS & RECOMMENDATIONS

11.1 The results of the desk study are presented in this report and Solmek can comment as follows:

Existing Features on and Near the Site

11.2 The Swimming Pool and Changing area of the complex is located within the southern half of the Leisure Centre and comprises an "L" shaped building. The southern half of the building is of masonry construction with masonry and glass panelling in the northern half.

11.3 The topography of the site varies; the land on the western and eastern sides of the Pool Area is lower than the south. The land rises up toward the south and south west from the pool base level to approximate pool water level. A series of vent chimneys are located on the eastern elevation with concrete bases which is accessed down a tarmac service roadway beneath the main entrance to the leisure centre.

11.4 The site is set wholly within Temple Memorial Park and comprises public open space over undulating grassed parkland intersected with footpaths. An all weather Sports Pitch is present to the south east with a Playground to the east. A parking area lies to the north west of the Playground.

Historical

11.5 The site remained a field with a small stream along the eastern boundary until the 1940's when it became part of Harton Moor Golf Course. The golf course was no longer labelled by the mid 1950's and the site became known as Temple Memorial Park in the 1970's. The stream was no longer shown around this time period. The Leisure Centre was constructed sometime between the late 1970's and the early 1980's and was extended in the 1990's.

11.6 The earliest maps show the site to lie within a series of fields with limestone quarries 650m to the east and collieries over 900m to the west. A Rifle Range was developed to the west iof the site around the late 1800's but was removed by the early 1900's. A period of steady residential development occurred from the 1920's and 1930's along with new road infrastructure which continued into the 1980's. John Reid Road was constructed sometime around the late 1960's. A refuse tip was shown on mapping from the late 1960's, 250m to the south west of the site, but this was not present on subsequent maps.

Environmental Setting

11.7 The superficial geology consists of Upper or Pelaw Clay beneath an area of domestic waste. The solid geology underlying the site is expected to comprise Middle Coal Measures rocks (Mudstone and sandstone). There are no faults in the area.

11.8 The BGS database indicates a number of boreholes have been drilled in the area prior to construction of the Leisure Centre. The ground conditions around the building generally consist of domestic waste, clay and ash to depths of up to 2.4mbgl. The natural deposits generally comprised layers of clay, silty clay and sand to depth of up to 7.0mbgl over boulder clay to at least 12.0mbgl.

11.9 The Envirocheck Report shows that the underlying solid geology beneath the site is designated a **Secondary A Aquifer**.

11.10 The drift geology is designated as **Unknown.**

11.11 The site is not in a Source Protection Zone. A Zone II (Outer Protection Zone) and Zone III (Total Catchment) SPZ lies 279m to the south east of the site.

11.12 The HPA-RPD-033 Indicative Atlas of Radon in England and Wales Map 19 shows the site lies in an area where between 1 and 3% of homes are at or above the radon action level. The BRE Radon – Guidance on Protective Measures for New Buildings Map 19 shows that no radon protective measures are necessary in the construction of any new dwellings or extensions.

11.13 The Envirocheck Reports shows three historical landfills on the site. Details from the Environment Agency website indicate that the three sites are Temple Memorial Park No1, Temple Park No2 and Temple Park No3. The first waste received was in January 1957 for the Temple Memorial Park No1 site and the last input date is given as January 1994. Temple Park No2 first received waste in January 1950 but no details of the last waste input is given. No details are given for Temple Park No3.

Flooding

11.14 The Envirocheck Report states that the site is not in an area affected by previous flooding events. There are no areas benefiting from flood defences or flood water storage areas within 1km of site.

Impact of Local Authority Guidance

11.15 Given the potential for the land on site to be contaminated it must be assessed with regards to Part 2A of the Environmental Protection Act (1990) and the local authority contaminated

land strategy. The contamination status of the site will be considered as part of the planning process to ensure the site is suitable for the proposed use.

Likelihood of Finding Contamination, its Nature and Extent and Key Contaminants

11.16 Given the history, previous buildings on the site and taking into account the published geology information, it is expected that made ground will be encountered across the site. The made ground is likely to consist of consolidated domestic waste products from the previous land filling operations mixed with clay and ash material. This is likely to be deepest around the southern extent of the pool building where the land is raised and shallowest along the eastern and western elevations.

11.17 The made ground may contain construction wastes with materials such as brick rubble, concrete, tarmac, glass, plastic, paper and card along with backfilled natural material. Asbestos may also be potentially present, given the dates of the previous filling operations.

Source – Pathway – Receptor Relationships

11.18 Pathways (as detailed in the conceptual model) may exist between the potential contamination in the made ground and human health, construction materials, vegetation and water. The site investigation will provide information to assess these pathways and the risks posed.

Proposed Development

11.19 The proposals include the refurbishment of the existing pool area at the leisure centre.

Geotechnical

11.20 The natural ground is likely to comprise silty clays of varying strengths with occasional sand layers over possibly firm to stiff boulder clay. The depth of foundations will largely be dictated by the thickness of made ground across the site and depth of the boulder clay.

11.21 Based on the previous drilling records the boulder clay was proven across the site from depths of between 5.0 and 7.0mbgl. A piling option would appear the most suitable should the proposed loads be high. A shallower foundation option may be suitable if firm clays are encountered at shallower depth and the proposed loadings are relatively light.

Mining

11.22 The Hebburn Fell coal seam is conjectured to outcrop to the north and east of the site and potentially dip beneath it towards the south and west. The Dean coal seam is conjectured to lie 300m to the west and dip away from site.

11.23 A Coal Mining Report has been obtained, dated 6th December 2011. The report indicates that there are six worked seams beneath the site at depths of between 315 and 448mbgl, the last date of working being 1969. The shallowest seam is the Yard which has a section of 190cm in the area, this was last worked in 1938.

11.24 There are no mine entries, tips or lagoons within 20m of the site. There have been no subsidence claims relating to the property over the last 10 years. The report concludes that old workings are present but all settlement is likely to have completed long ago.

11.25 The nearby Harton Colliery shaft encountered three very thin (<0.1m thick) seams of coal from depths of between 30.0mbgl and 36.5mbgl. The shallowest potentially workable seam (0.8m in thickness) lies over 80.0mbgl. It is possible therefore that the Hebburn Fell seam may be too thin to have been worked. The overall risk of the development being affected by mining issues therefore appears to be low. However the Local Authority may require further information in terms of rotary drilling to confirm this.

Phase II Works

11.26 Based on the information collated in this desk study a phase two intrusive investigation is recommended. The investigation should comprise a number of deep shell and auger boreholes around the periphery of the structure.

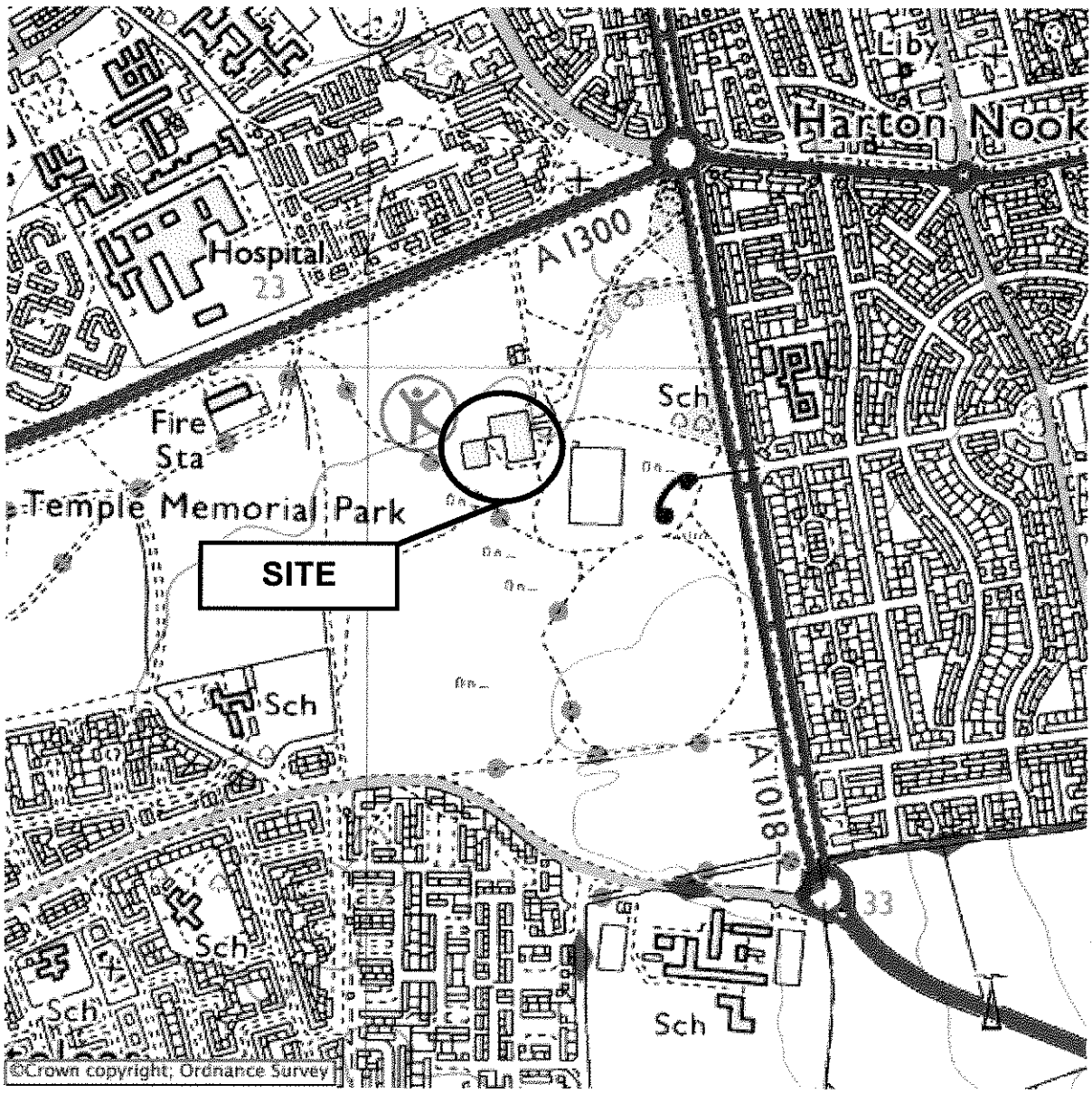
11.27 Due to the likely presence of landfilled materials beneath the site gas/groundwater monitoring pipes should be installed in a minimum of three boreholes to assess the shallow ground gas and water levels beneath the site. At least three monitoring visits will be required. However, if high or variable concentrations of ground gases are recorded, an extended period of monitoring maybe necessary.

11.28 Samples from the boreholes should be subject to a series of both geotechnical and chemical contamination analysis.

11.29 Site investigations are designed according to the type of development, the requirements of the Client, and recommendations in BS 5930 and BS 10175.

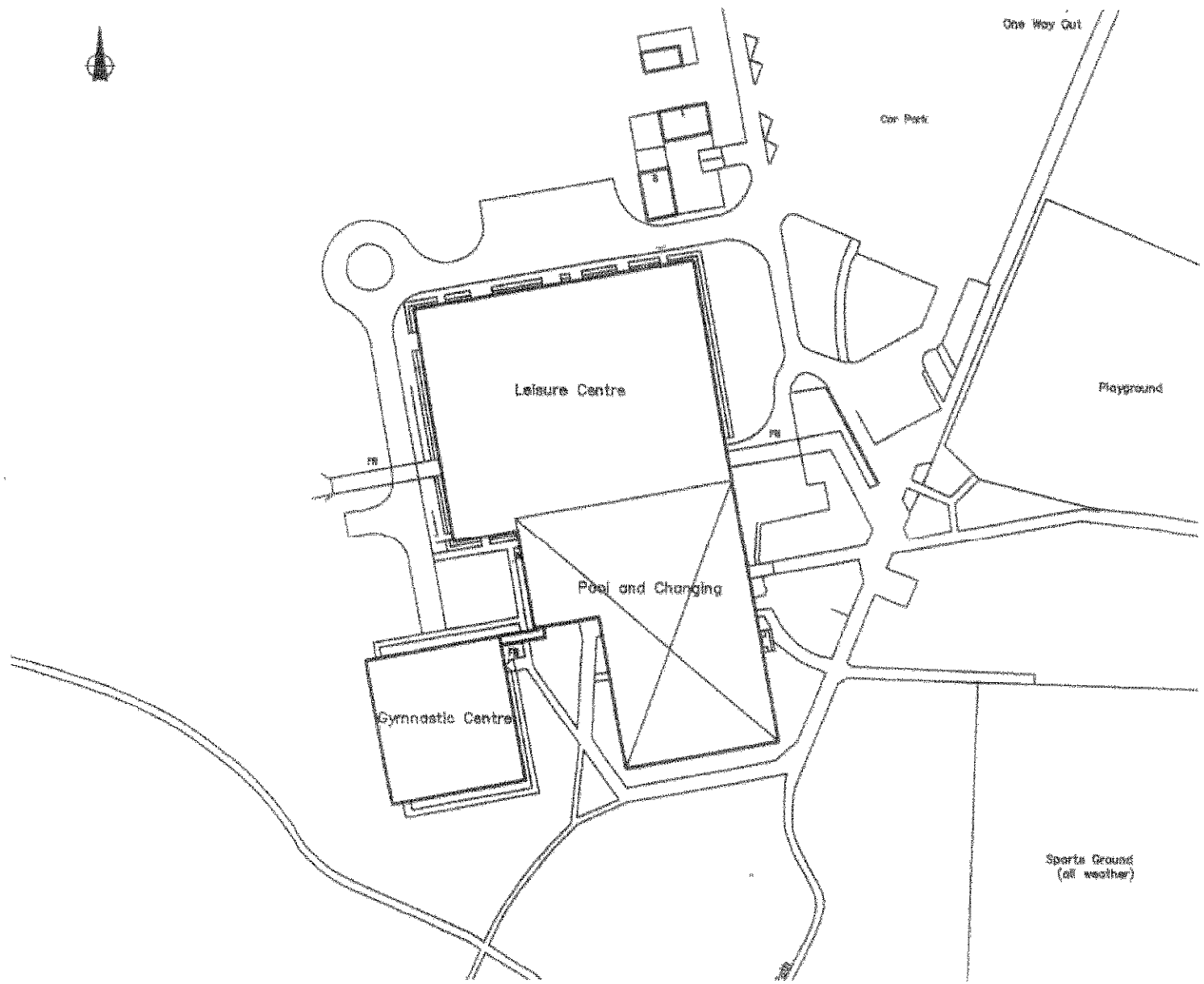
SOLMEK

APPENDIX 1



Client:	South Tyneside Council	
Project:	Temple Park Leisure Centre	
Title:	Site Location Map	
Drawing No:	Figure 1	Scale: NTS
Date	December 2011	

SOLMEK



Title
Site Plan

Project
Temple Park Leisure Centre

Client
South Tyneside Council

Date
December 2011

DRG No
Figure 2

Scale
NTS

Solmek
12 Yarm Road
Stockton on Tees
Cleveland
TS18 3NA
Tel: +44 (0) 1642 607 083
Fax: +44 (0) 1642 612 355
Email: south@solmek.com
www.solmek.com

SOLMEK



Plate 1: View east towards the Swimming Pool area

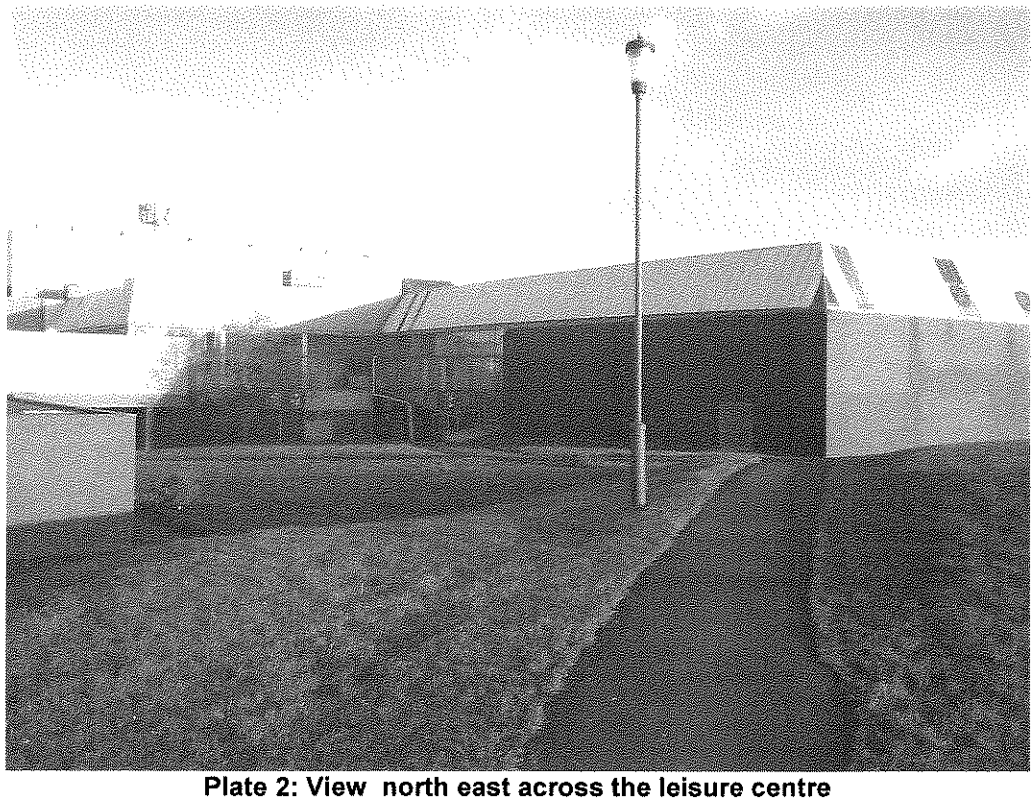


Plate 2: View north east across the leisure centre

Client:	South Tyneside Council
Project:	Temple Park Leisure Centre
Title:	Plates 1 & 2
DRG No:	Figure 3
Date	December 2011

SOLMEK



Plate 3: View north west towards the pool area



Plate 4: View south west of ventilation system for the pool area

Client:	South Tyneside Council
Project:	Temple Park Leisure Centre
Title:	Plates 3 & 4
DRG No:	Figure 4
Date	December 2011

SOLMEK



Plate 5: View east at broken windows of Swimming Pool area.

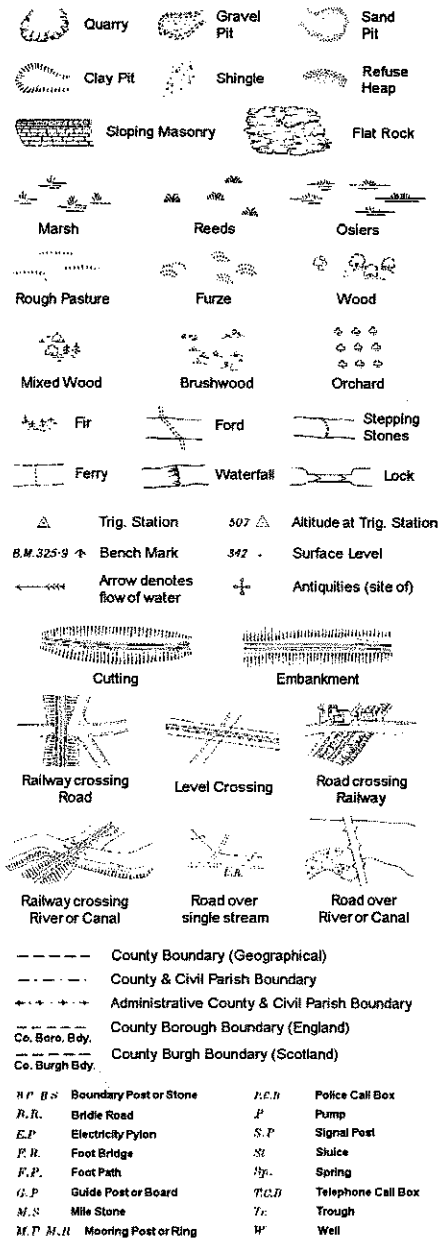
Client:	South Tyneside Council
Project:	Temple Park Leisure Centre
Title:	Plates 5
DRG No:	Figure 5
Date	December 2011

SOLMEK

APPENDIX 2

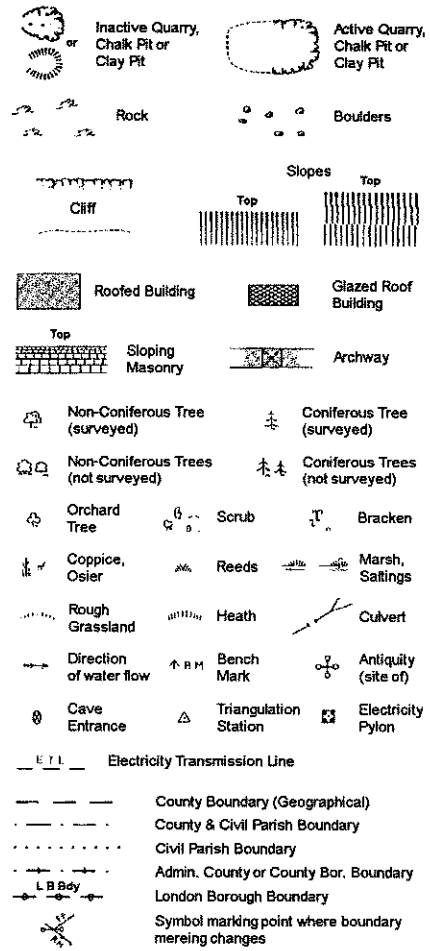
Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



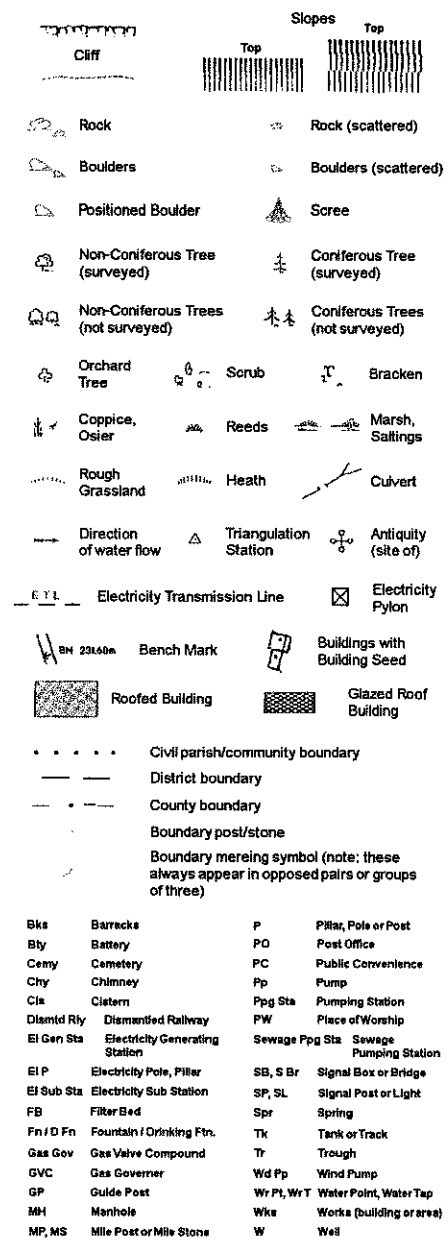
B.S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	Sl	Sluice
F.P.	Foot Path	Spr.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250



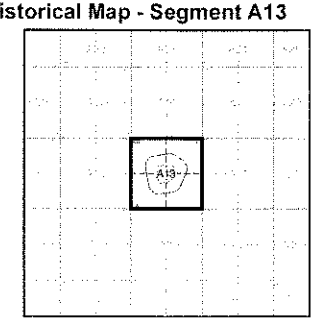
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governor	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

Envirocheck®

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Durham	1:2,500	1874 - 1886	2
Durham	1:2,500	1897	3
Durham	1:2,500	1915 - 1916	4
Durham	1:2,500	1942	5
Ordnance Survey Plan	1:2,500	1956 - 1959	6
Ordnance Survey Plan	1:1,250	1956 - 1959	7
Additional SIMs	1:1,250	1959 - 1985	8
Ordnance Survey Plan	1:1,250	1966 - 1970	9
Ordnance Survey Plan	1:2,500	1970	10
Ordnance Survey Plan	1:1,250	1970 - 1971	11
Supply of Unpublished Survey Information	1:1,250	1974	12
Additional SIMs	1:1,250	1983	13
Ordnance Survey Plan	1:1,250	1985	14
Large-Scale National Grid Data	1:1,250	1993	15
Large-Scale National Grid Data	1:1,250	1994 - 1997	16

Historical Map - Segment A13



Order Details

Order Number: 36839102_1_1
Customer Ref: S111123
National Grid Reference: 437180, 563950
Slice: A
Site Area (Ha): 2.61
Search Buffer (m): 100

Site Details

Temple Leisure Centre, Temple Memorial Park, South Shields, NE34 8QN

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Web www.envirocheck.co.uk

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

Gravel Pit
Sand Pit
Other Pits
Quarry
Shingle
Orchard
Osiers
Reeds
Marsh
Mixed Wood
Deciduous
Brushwood
Fir
Furze
Rough Pasture
Arrow denotes flow of water
Trigonometrical Station
Site of Antiquities
Bench Mark
Pump, Guide Post, Signal Post
Well, Spring, Boundary Post
·285 Surface Level
Sketched Contour
Instrumental Contour
Main Roads
Fenced
Un-Fenced
Minor Roads
Fenced
Un-Fenced
Sunken Road
Raised Road
Road over Railway
Railway over River
Railway over Road
Level Crossing
Road over River or Canal
Road over Stream
Road over Stream
County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)
R.D. Bdy. Rural District Boundary
Civil Parish Boundary

Ordnance Survey Plan 1:10,000

Chalk Pit, Clay Pit or Quarry
Gravel Pit
Sand Pit
Disused Pit or Quarry
Refuse or Slag Heap
Lake, Loch or Pond
Dunes
Boulders
Coniferous Trees
Non-Coniferous Trees
Orchard
Scrub
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Sloping Masonry
Electricity Transmission Line
Pole
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
Standard Gauge Single Track
Siding, Tramway or Mineral Line
Narrow Gauge
Geographical County
Administrative County, County Borough or County of City
Municipal Borough, Urban or Rural District, Burgh or District Council
Borough, Burgh or County Constituency
Shown only when not coincident with other boundaries
Civil Parish
Shown alternately when coincidence of boundaries occurs

BP, BS	Boundary Post or Stone	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	Well

1:10,000 Raster Mapping

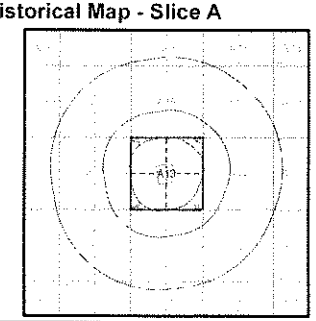
Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Sand
Sand Pit
Slopes
Top of cliff
General detail
Underground detail
Overhead detail
Narrow gauge railway
Multi-track railway
Single track railway
County boundary (England only)
Civil, parish or community boundary
District, Unitary, Metropolitan, London Borough boundary
Constituency boundary
Area of wooded vegetation
Non-coniferous trees
Non-coniferous trees (scattered)
Coniferous trees
Coniferous trees (scattered)
Positioned tree
Orchard
Coppice or Osiers
Rough Grassland
Heath
Scrub
Marsh, Salt Marsh or Reeds
Water feature
Flow arrows
Mean high water (springs)
Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
Bench mark (where shown)
Triangulation station
Point feature (e.g. Guide Post or Mile Stone)
Pylon, flare stack or lighting tower
Site of (antiquity)
Glasshouse
General Building
Important Building

Envirocheck®

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Durham	1:10,560	1862	3
Northumberland	1:10,560	1864	4
Durham	1:10,560	1898	5
Northumberland	1:10,560	1899	6
Durham	1:10,560	1921	7
Durham	1:10,560	1938	8
Ordnance Survey Plan	1:10,000	1951 - 1952	9
Ordnance Survey Plan	1:10,000	1967 - 1968	10
Ordnance Survey Plan	1:10,000	1976 - 1977	11
Sunderland	1:10,000	1976	12
Newcastle-upon-Tyne	1:25,000	1977	13
Ordnance Survey Plan	1:10,000	1986 - 1987	14
Ordnance Survey Plan	1:10,000	1993	15
10K Raster Mapping	1:10,000	2000	16
10K Raster Mapping	1:10,000	2006	17
10K Raster Mapping	1:10,000	2011	18

Historical Map - Slice A



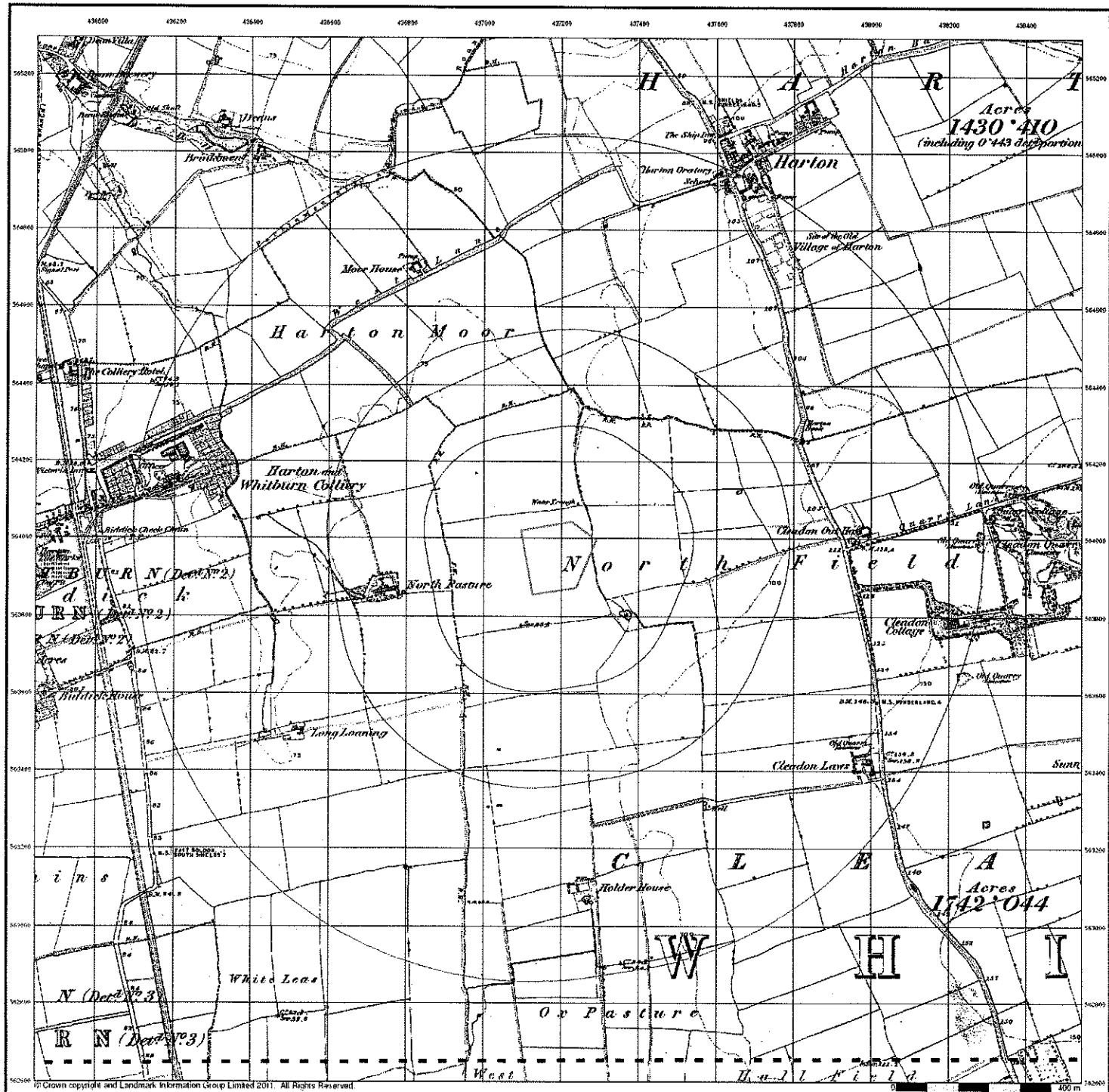
Order Details

Order Number: 36839102_1_1
Customer Ref: S111123
National Grid Reference: 437180, 563950
Slice: A
Site Area (Ha): 2.61
Search Buffer (m): 1000

Site Details

Temple Leisure Centre, Temple Memorial Park, South Shields, NE34 8QN

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Durham

Published 1862

Source map scale - 1:10,560

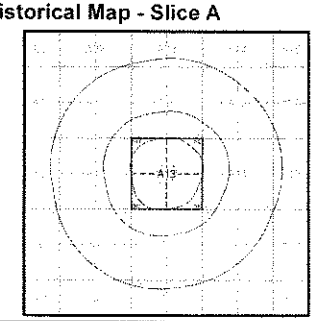
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

00400
1862
1:10,560

00800
1862
1:10,560

Historical Map - Slice A



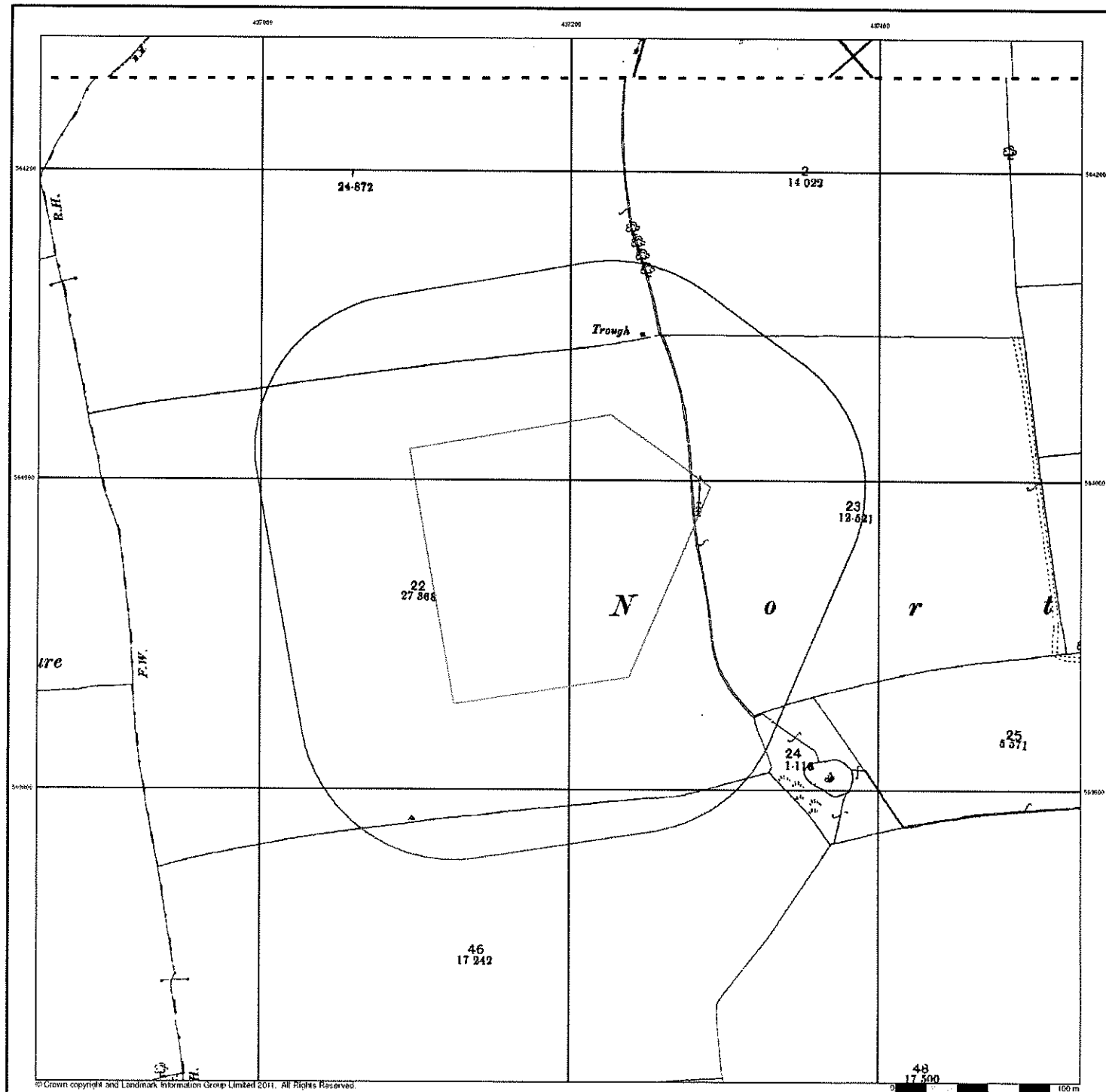
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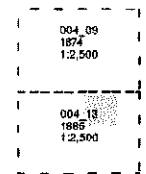
Durham

Published 1874 - 1886

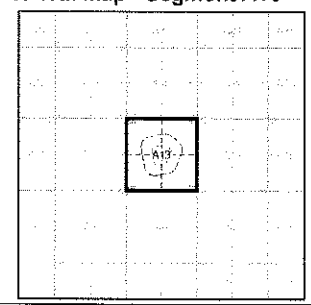
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



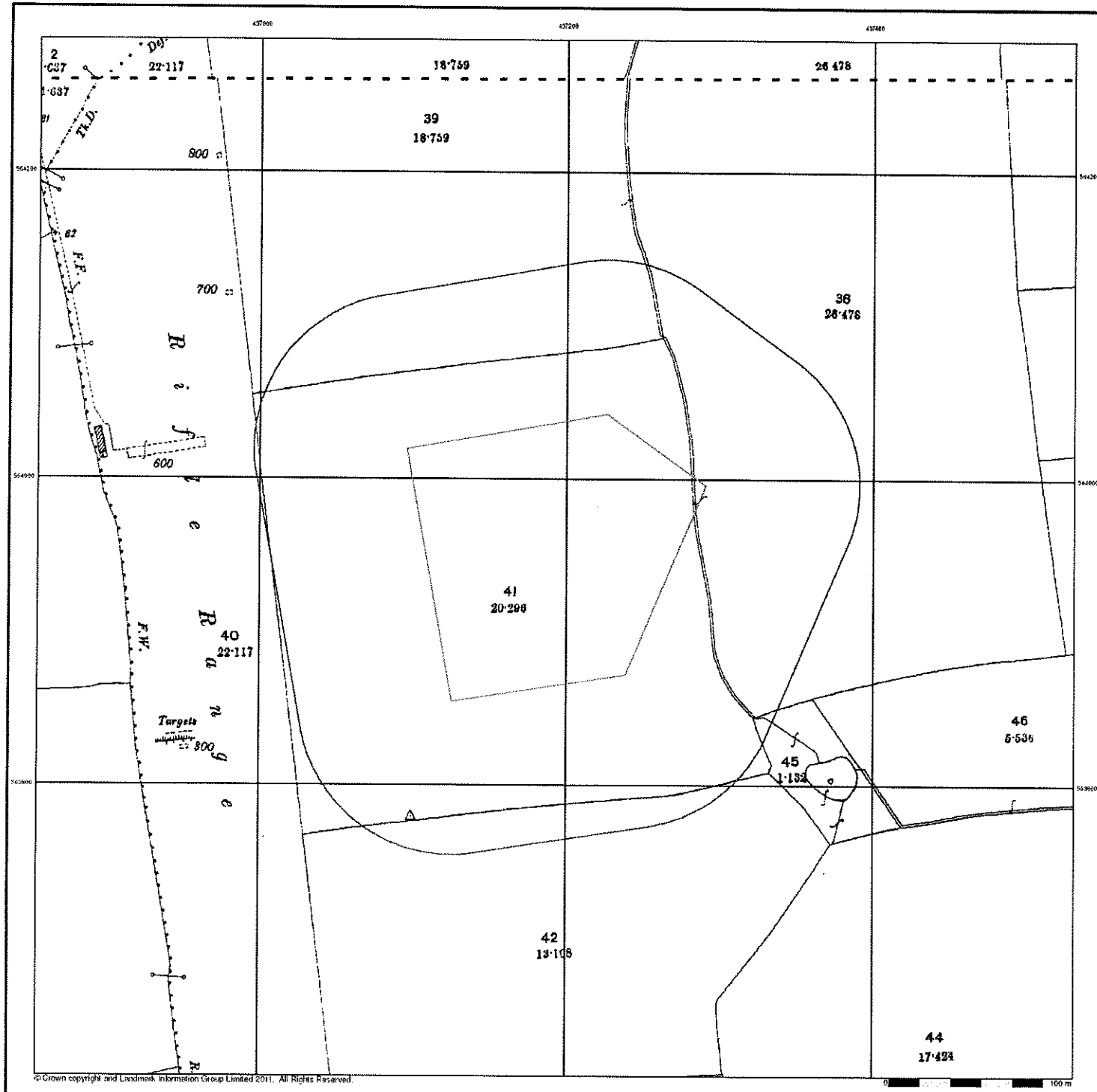
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Order Number:	36839102_1_1
Customer Ref:	S111123
National Grid Reference:	437180, 563950
Slice:	A
Site Area (Ha):	2.61
Search Buffer (m):	100

Site Details

Temple Leisure Centre, Temple Memorial Park, South Shields, NE34 8QN

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Durham

Published 1897

Source map scale - 1:2,500

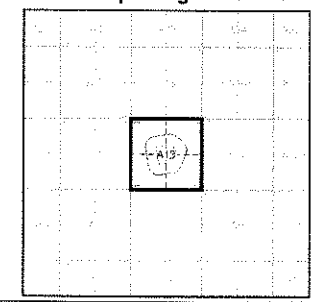
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1936, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

004_09
1897
1:2,500

004_13
1897
1:2,500

Historical Map - Segment A13



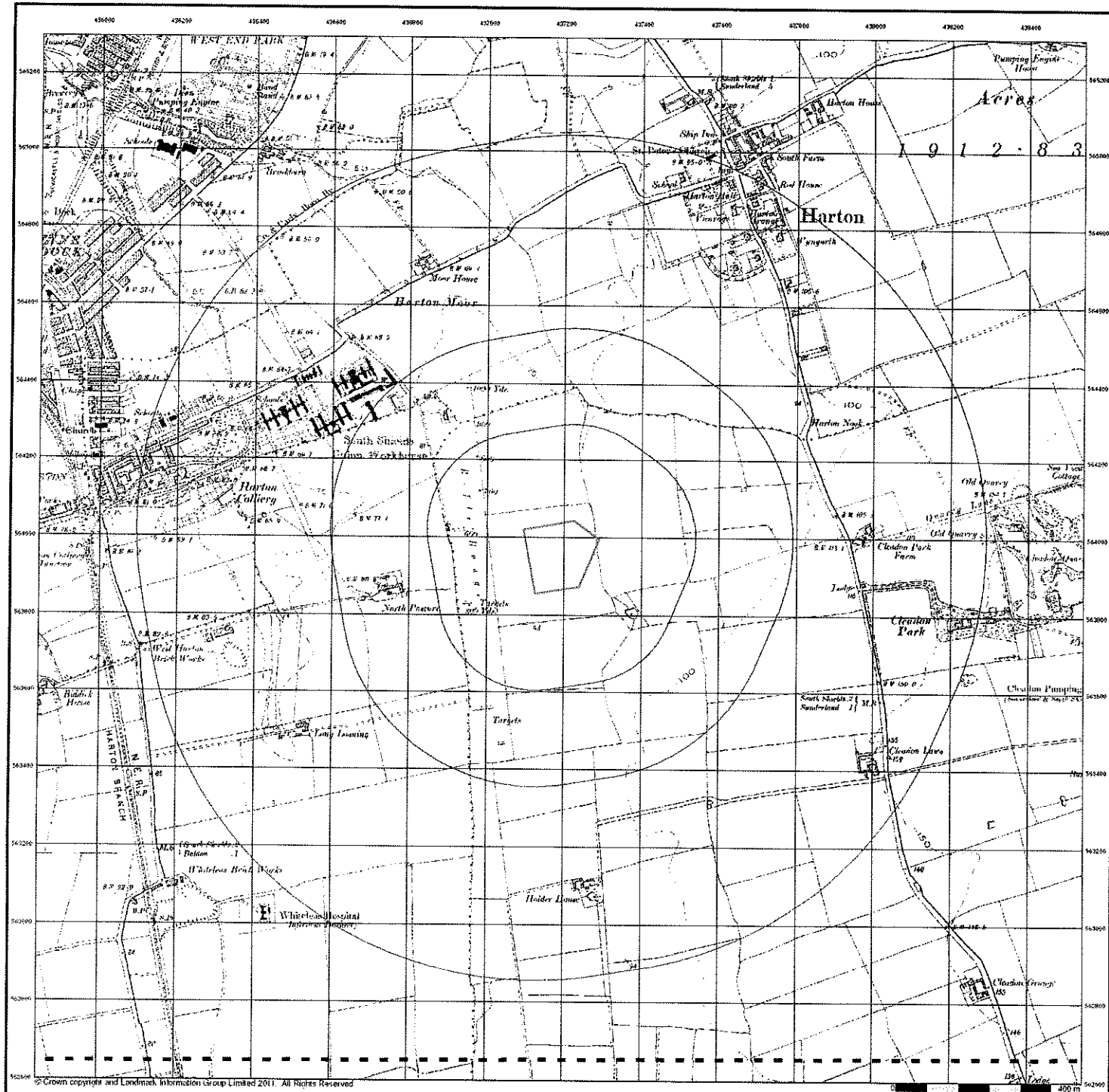
Order Details

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Customer Ref:	S111123
National Grid Reference:	437180, 563950
Slice:	A
Site Area (Ha):	2.61
Search Buffer (m):	100

Site Details

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Durham

Published 1898

Source map scale - 1:10,560

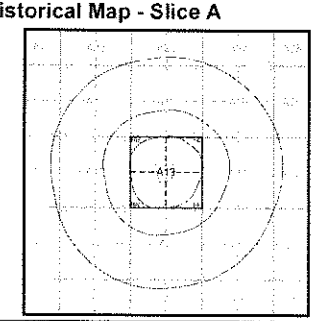
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

004SW
1898
1:10,560

008NW
1898
1:10,560

Historical Map - Slice A



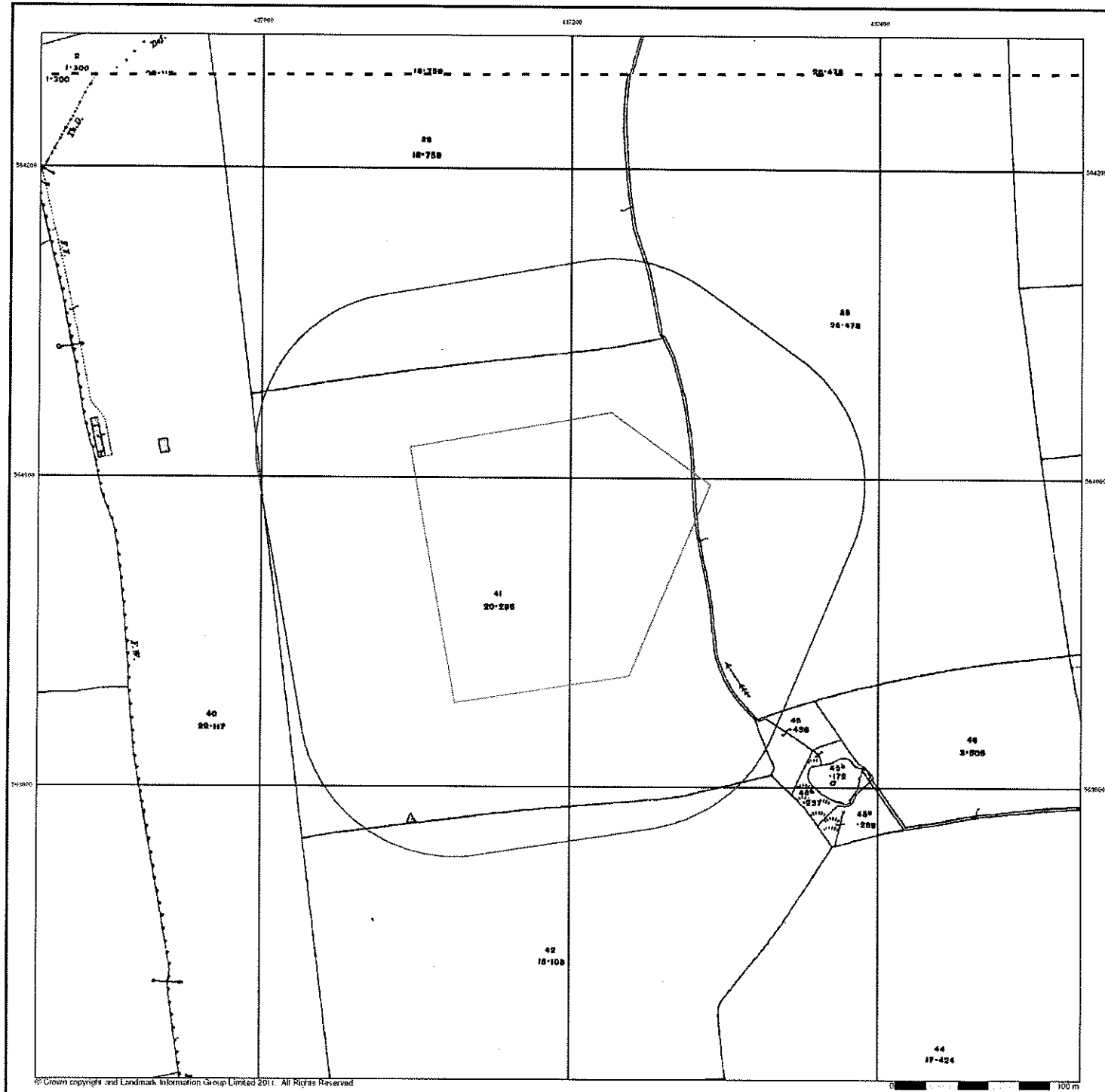
Order Details

Order Number:	36839102_1_1
Customer Ref:	S111123
National Grid Reference:	437180, 563950
Slice:	A
Site Area (Ha):	2.61
Search Buffer (m):	1000

Site Details

Temple Leisure Centre, Temple Memorial Park, South Shields, NE34 8QN

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Durham

Published 1915 - 1916

Source map scale - 1:2,500

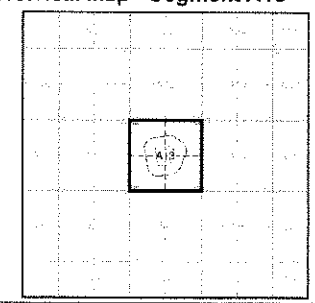
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

004_09
1916
1:2,500

004_13
1915
1:2,500

Historical Map - Segment A13

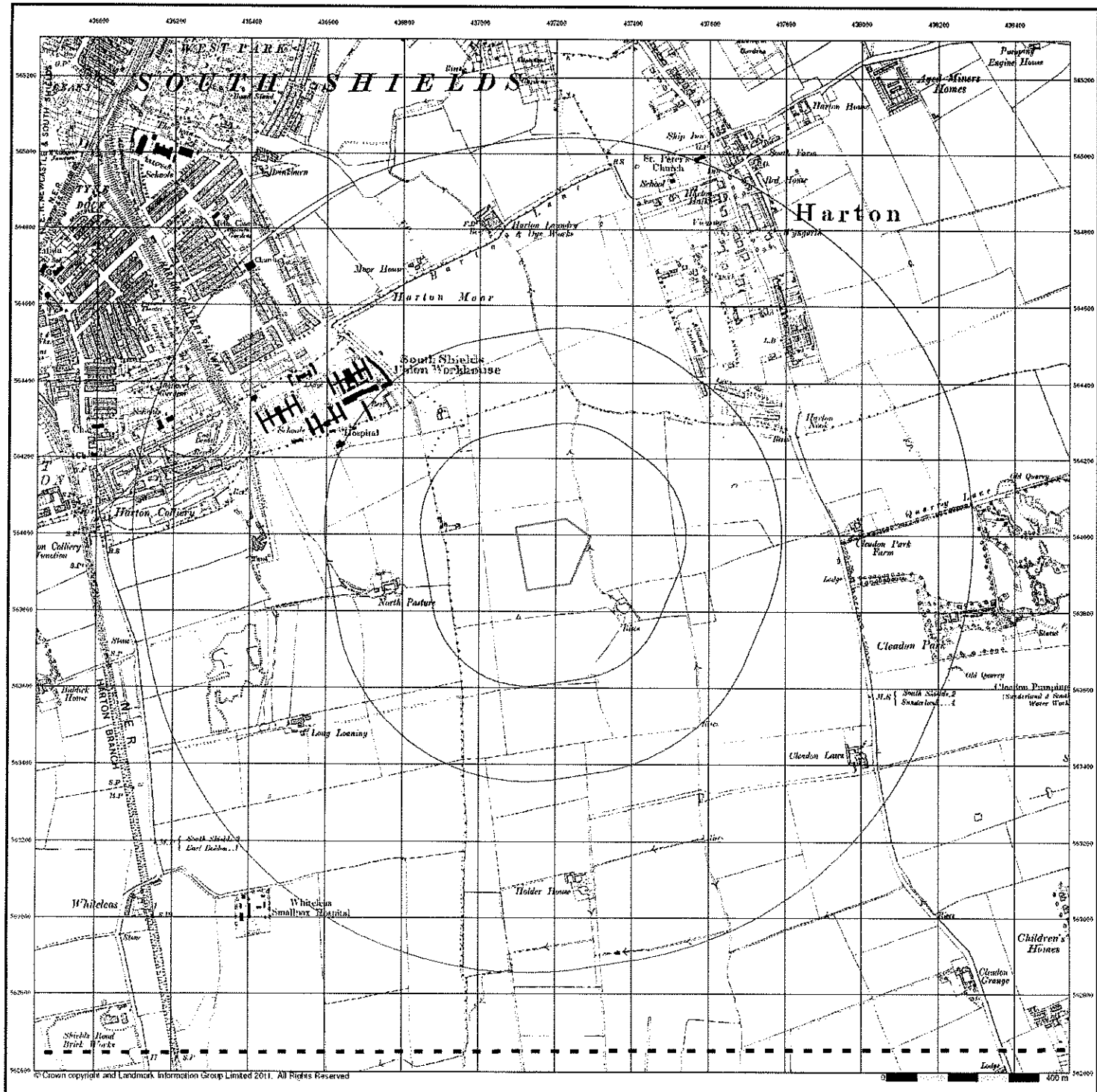


Order Details

Order Number:	36839102_1_1
Customer Ref:	S111123
National Grid Reference:	437180, 563950
Slice:	A
Site Area (Ha):	2.61
Search Buffer (m):	100

Site Details

Temple Leisure Centre, Temple Memorial Park, South Shields, NE34 8QN



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Durham

Published 1921

Source map scale - 1:10,560

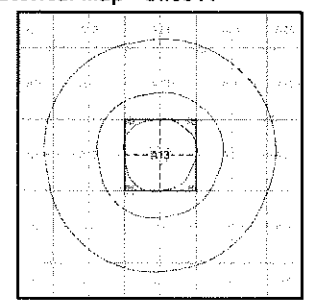
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

004SW
1921
1:10,560

008NW
1921
1:10,560

Historical Map - Slice A



Order Details

Order Number:	36839102_1_1
Customer Ref:	S111123
National Grid Reference:	437180, 563950
Slice:	A
Site Area (Ha):	2.61
Search Buffer (m):	1000

Site Details

Temple Leisure Centre, Temple Memorial Park, South Shields, NE34 8QN



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Durham

Published 1938

Source map scale - 1:10,560

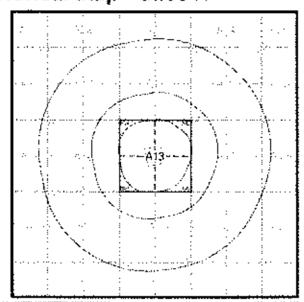
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

004SW
1938
1:10,560

008NW
1938
1:10,560

Historical Map - Slice A



Order Details

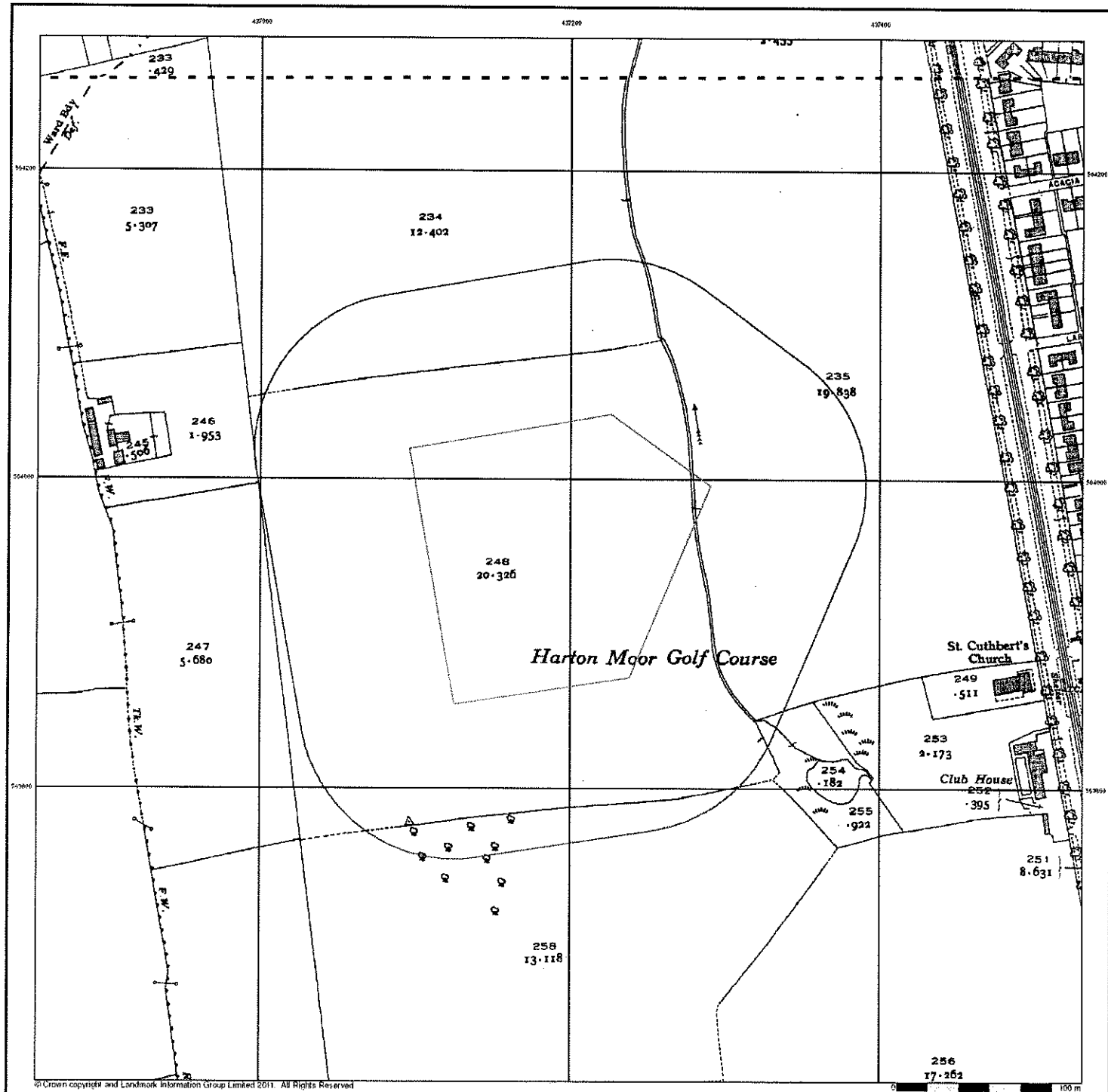
Order Number:	36839102_1_1
Customer Ref:	S111123
National Grid Reference:	437180, 563950
Slice:	A
Site Area (Ha):	2.61
Search Buffer (m):	1000

Site Details

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Durham

Published 1942

Source map scale - 1:2,500

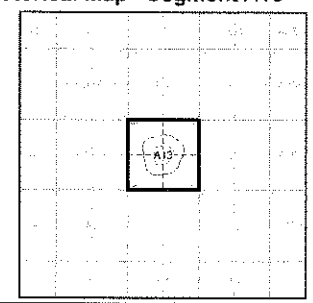
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

004_09
1942
1:2,500

004_13
1942
1:2,500

Historical Map - Segment A13



Order Details

Order Number:	36839102_1_1
Customer Ref:	S111123
National Grid Reference:	437180, 563950
Slice:	A
Site Area (Ha):	2.61
Search Buffer (m):	100

Site Details

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Ordnance Survey Plan
Published 1951 - 1952
Source map scale - 1:10,000

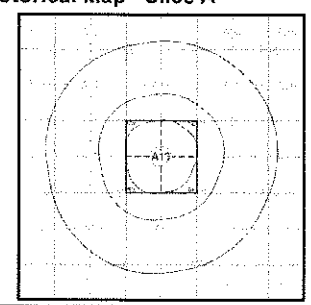
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

NZ36NE
1952
1:10,560

NZ36SE
1951
1:10,560

Historical Map - Slice A



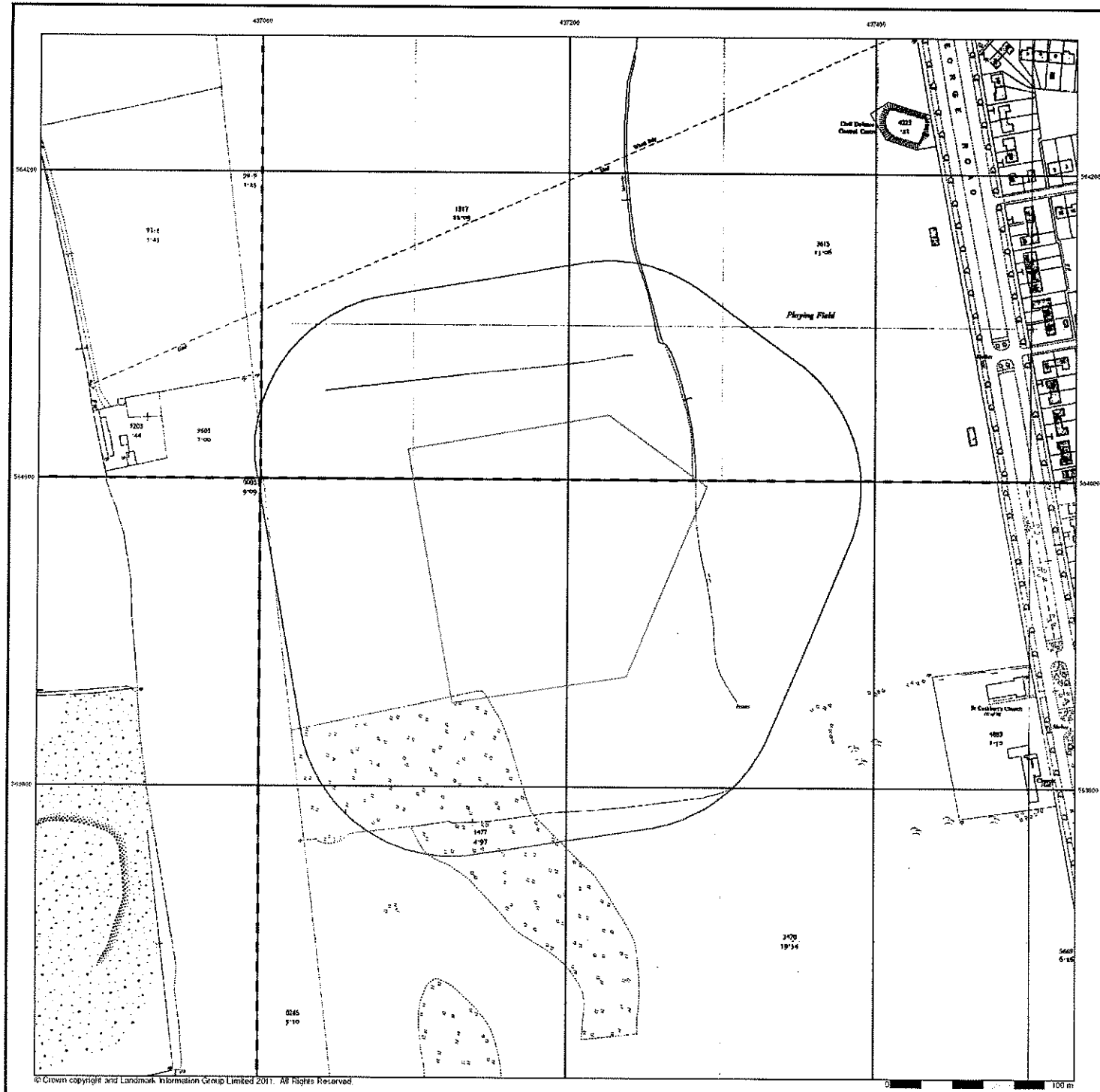
Order Details

Order Number:	36839102_1_1
Customer Ref:	S111123
National Grid Reference:	437180, 563950
Slice:	A
Site Area (Ha):	2.61
Search Buffer (m):	1000

Site Details

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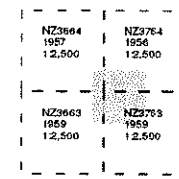
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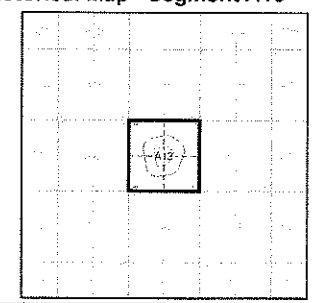
Ordnance Survey Plan
Published 1956 - 1959
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	36839102_1_1
Customer Ref:	S111123
National Grid Reference:	437180, 563950
Slice:	A
Site Area (Ha):	2.61
Search Buffer (m):	100

Site Details

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Ordnance Survey Plan
Published 1967 - 1968
Source map scale - 1:10,000

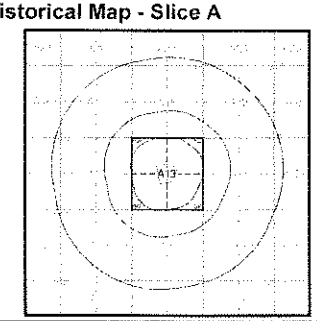
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

NZ36NE
1967
1:10,560

NZ36SE
1968
1:10,560

Historical Map - Slice A

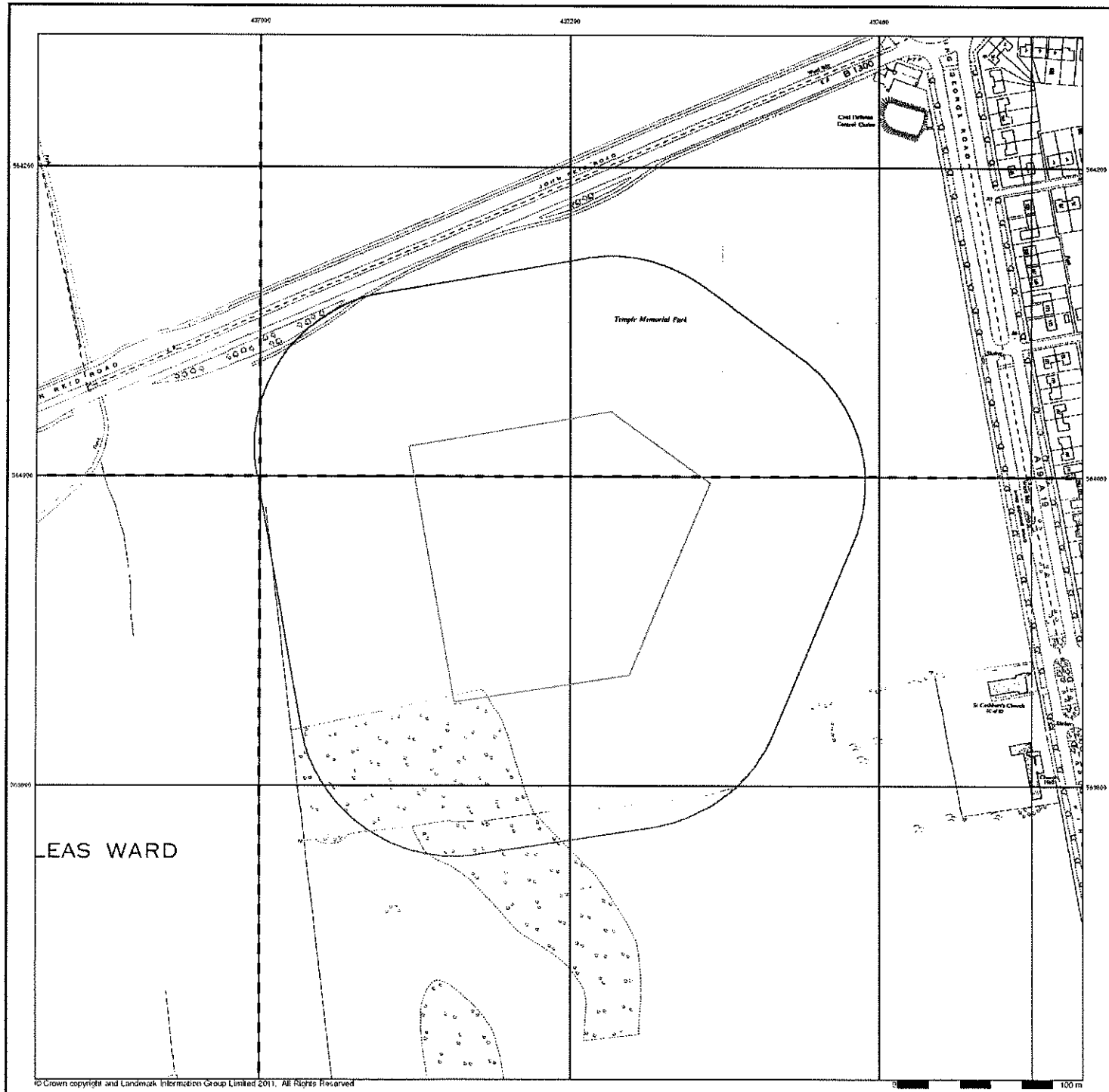


Order Details

Order Number:	36839102_1_1
Customer Ref:	S111123
National Grid Reference:	437180, 563950
Slice:	A
Site Area (Ha):	2.61
Search Buffer (m):	1000

Site Details

Temple Leisure Centre, Temple Memorial Park, South Shields, NE34 8QN



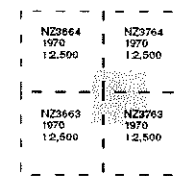
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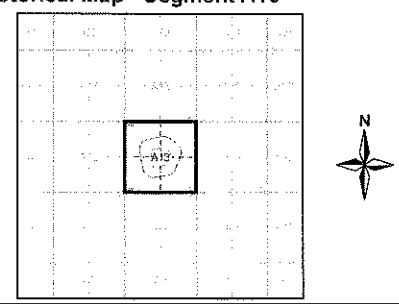
Ordnance Survey Plan
Published 1970
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	36839102_1_1
Customer Ref:	S111123
National Grid Reference:	437180, 563950
Slice:	A
Site Area (Ha):	2.61
Search Buffer (m):	100

Site Details

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Ordnance Survey Plan
Published 1976 - 1977
Source map scale - 1:10,000

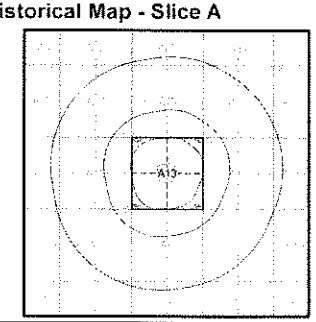
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

NZ36NE
1976
1:10,000

NZ36SE
1977
1:10,000

Historical Map - Slice A



Order Details

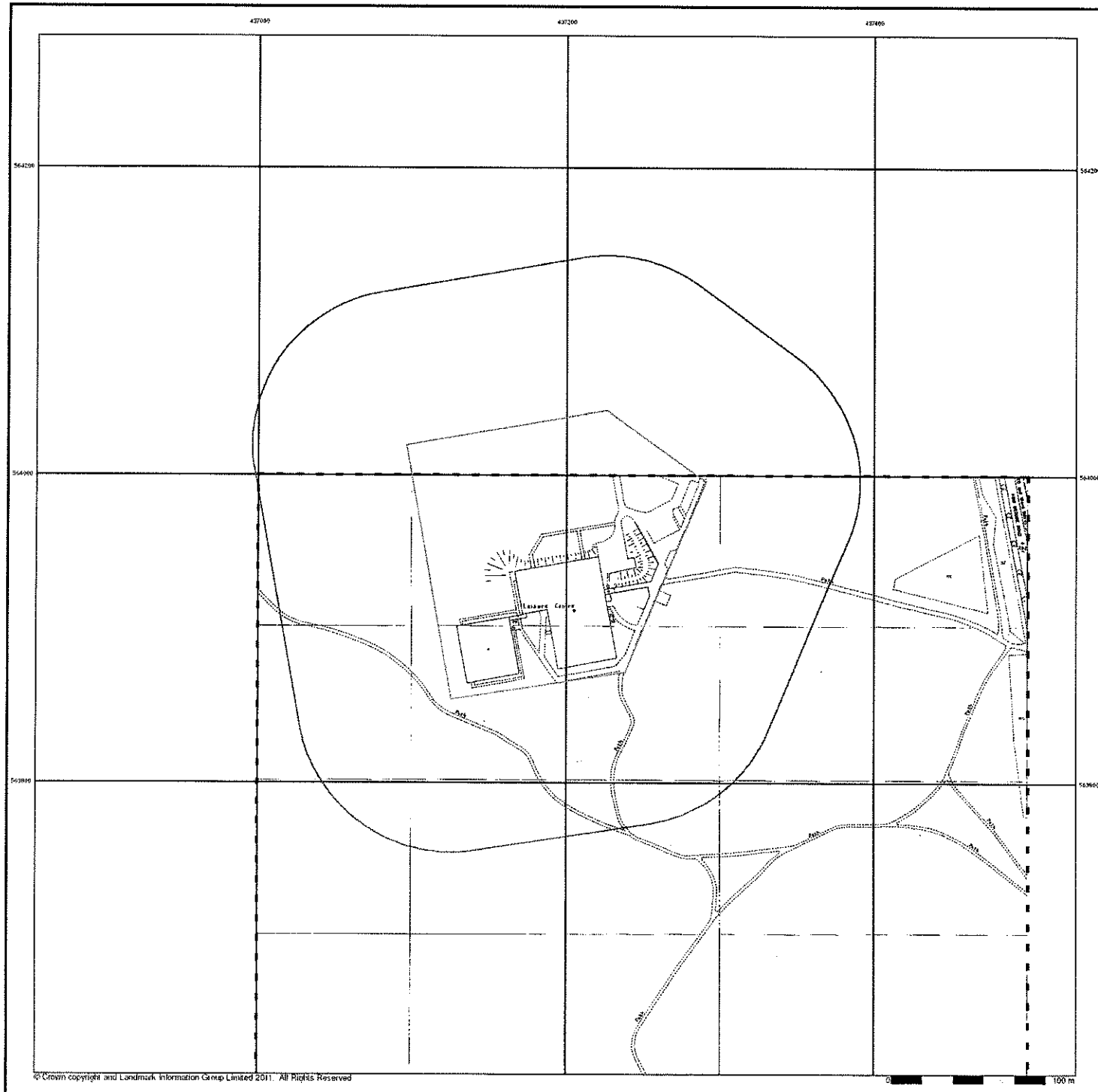
Order Number:	36839102_1_1
Customer Ref:	S111123
National Grid Reference:	437180, 563950
Slice:	A
Site Area (Ha):	2.61
Search Buffer (m):	1000

Site Details

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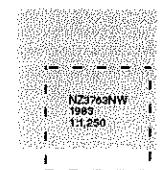
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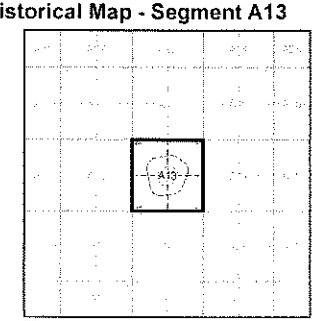
Additional SIMs
Published 1983
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	36839102_1_1
Customer Ref:	S111123
National Grid Reference:	437180, 563950
Slice:	A
Site Area (Ha):	2.61
Search Buffer (m):	100

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Ordnance Survey Plan
Published 1986 - 1987
Source map scale - 1:10,000

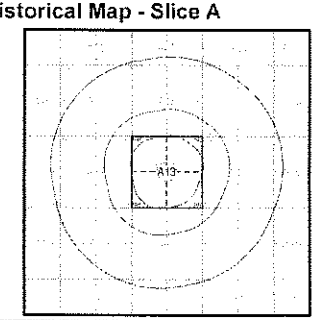
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

NZ36NE
1986
1:10,000

NZ36SE
1987
1:10,000

Historical Map - Slice A



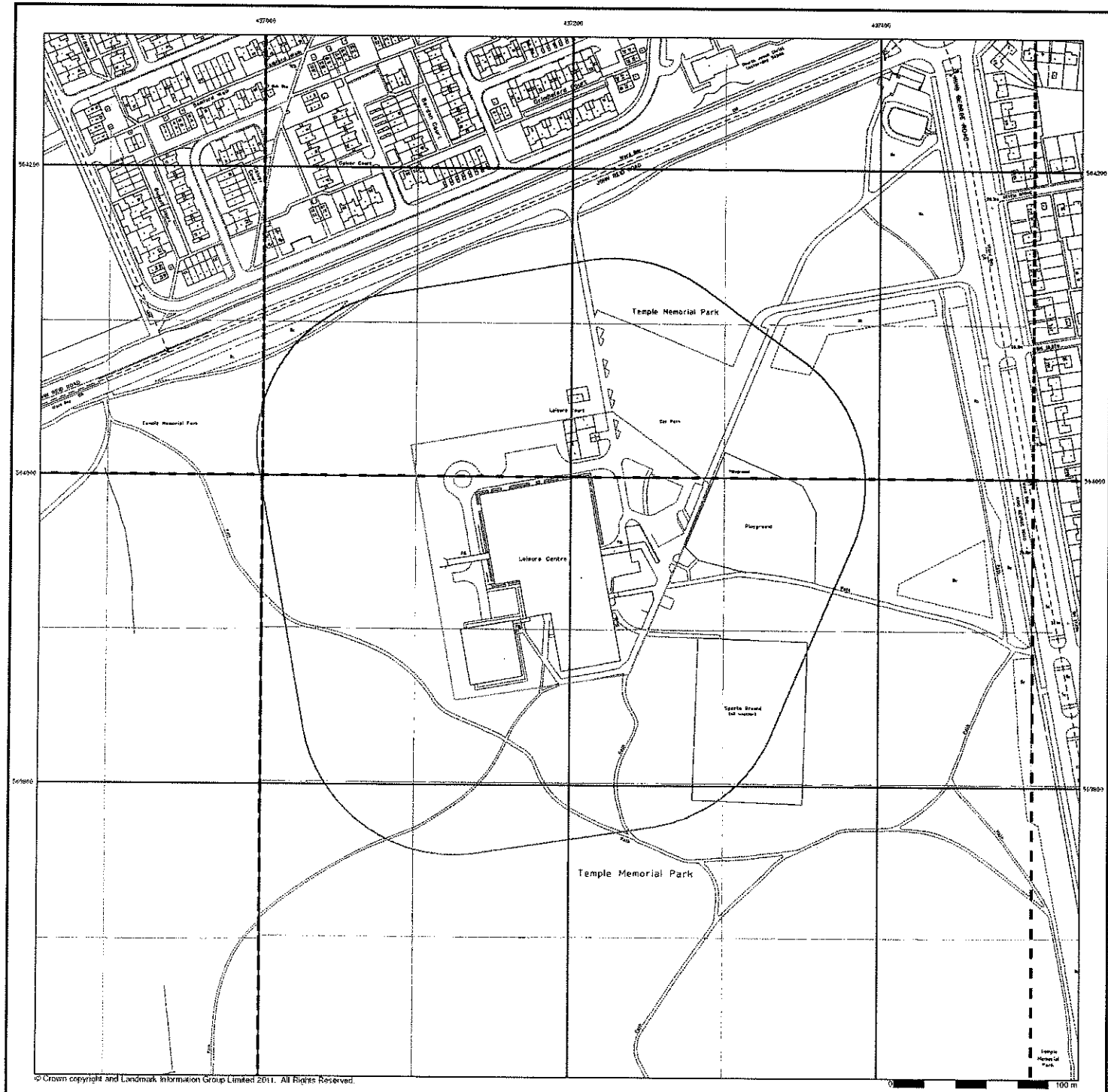
Order Details

Order Number:	36839102_1_1
Customer Ref:	S111123
National Grid Reference:	437180, 563950
Slice:	A
Site Area (Ha):	2.61
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Site Details

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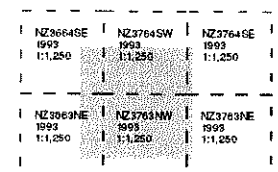
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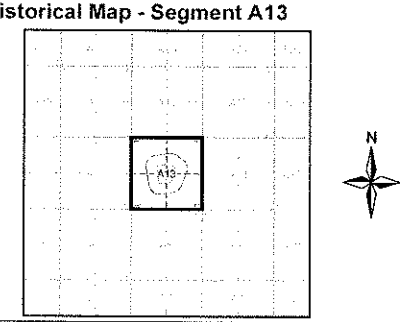
Large-Scale National Grid Data
Published 1993
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	36839102_1_1
Customer Ref:	S111123
National Grid Reference:	437180, 563950
Slice:	A
Site Area (Ha):	2.61
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Site Details

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10k Raster Mapping
Published 2000
Source map scale - 1:10,000

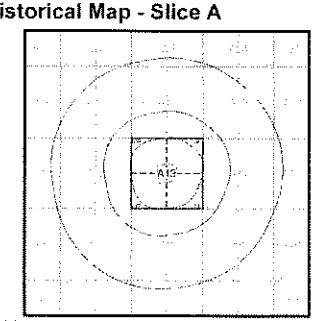
The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

NZ36NE
2000
1:10,000

NZ36SE
2000
1:10,000

Historical Map - Slice A



Order Details

Order Number:	36839102_1_1
Customer Ref:	S111123
National Grid Reference:	437180, 563950
Slice:	A
Site Area (Ha):	2.61
Search Buffer (m):	1000

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10k Raster Mapping
Published 2006
Source map scale - 1:10,000

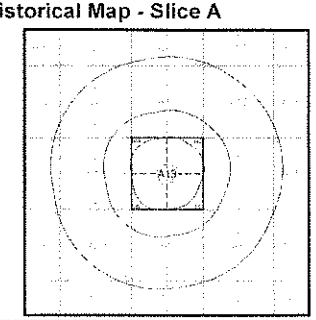
The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

NZ36NE
2006
1:10,000

NZ36SE
2006
1:10,000

Historical Map - Slice A



Order Details

Order Number:	36839102_1_1
Customer Ref:	S111123
National Grid Reference:	437180, 563950
Slice:	A
Site Area (Ha):	2.61
Search Buffer (m):	1000

Site Details

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10k Raster Mapping
Published 2011
Source map scale - 1:10,000

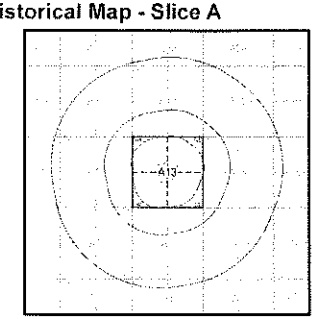
The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

NZ36NE
2011
1:10,000

NZ36SE
2011
1:10,000

Historical Map - Slice A



Order Details

Order Number:	36839102_1_1
Customer Ref:	S111123
National Grid Reference:	437180, 563950
Slice:	A
Site Area (Ha):	2.61
Search Buffer (m):	1000

Site Details

Temple Leisure Centre, Temple Memorial Park, South Shields, NE34 8QN