Messrs MacFarlane

Main Street, Dechmont, West Lothian

Mining Risk Assessment Report

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Mining Risk Assessment Report

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G2014/166

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Reviewed by:

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Mason Evans Partnership Limited The Piazza 95 Morrison Street GLASGOW G5 8BE

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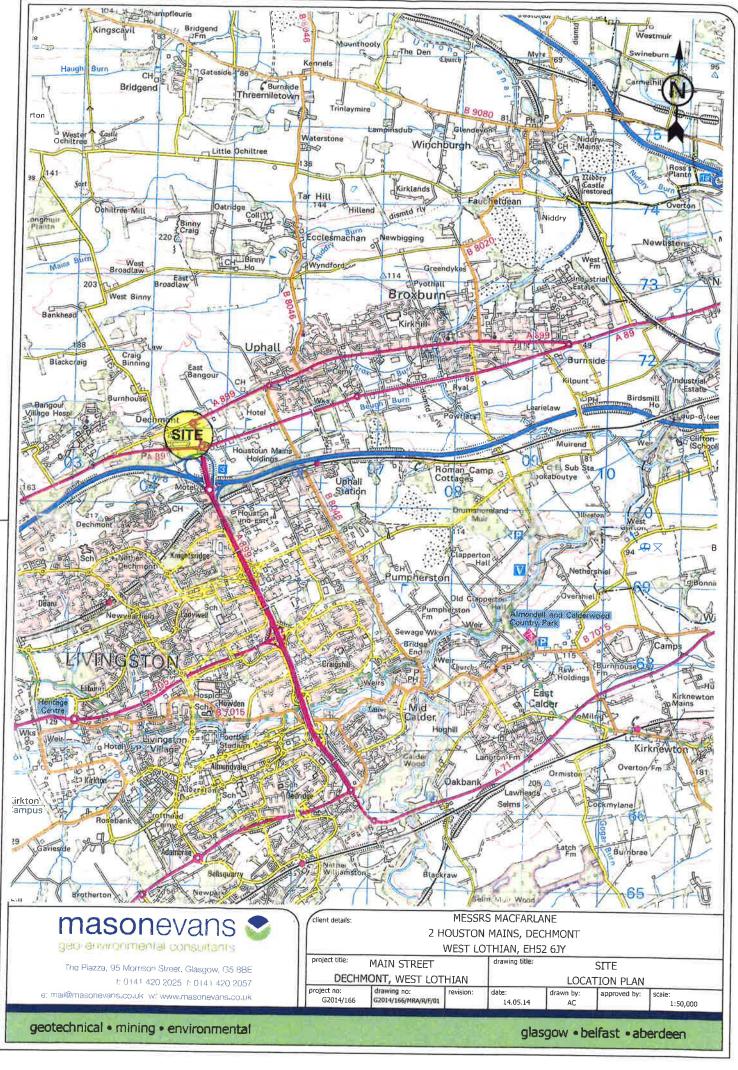
1.0 **INTRODUCTION**

1.1 General

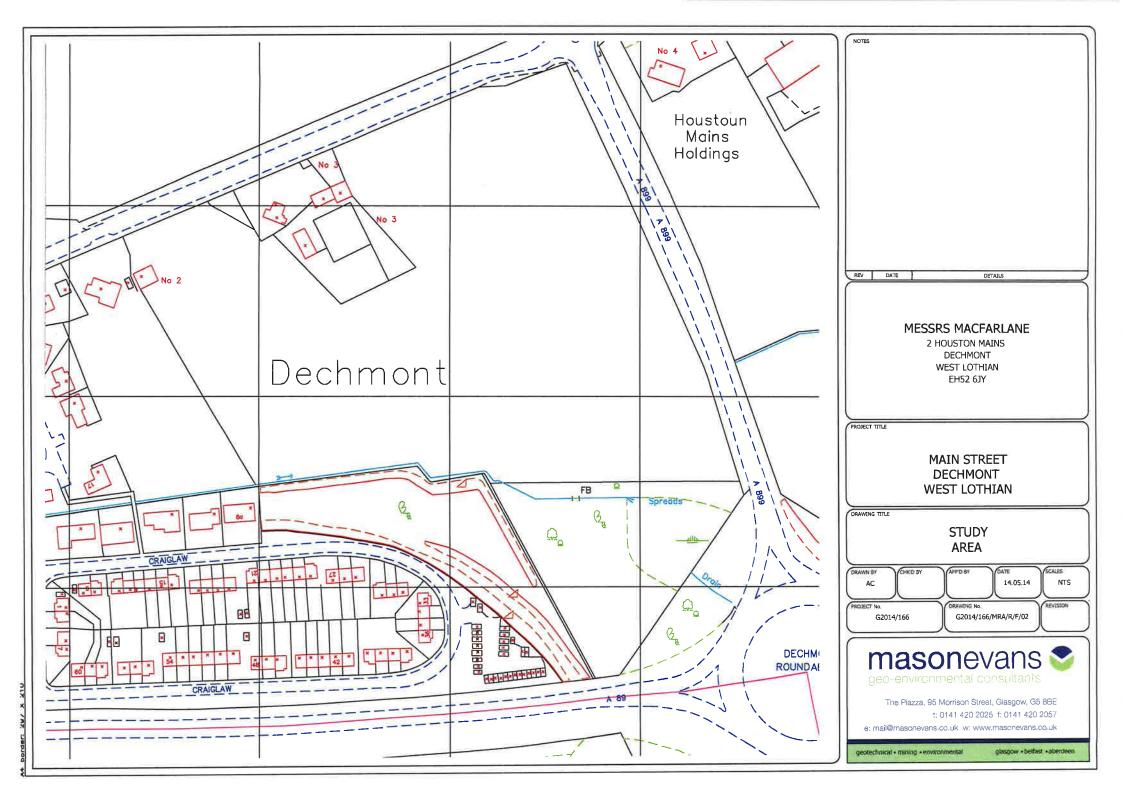
- 1.1.1 We understand that Messrs MacFarlane (the Client) are proposing residential development within a site to the immediate south of Main Street, Dechmont, West Lothian. In relation to the proposed development, Clarendon Planning and Development Ltd has commissioned a Mining Risk Assessment Report, on behalf of the Client, in support of the development. As a specialist geo-environmental consultancy firm with experience of impacts related to shallow mine-workings, we were subsequently requested to advise accordingly.
- 1.1.2 The site location and proposed development are shown on Drawing Nos G2014/166/MRA/01 to 04.
- 1.1.3 The purpose of the Mining Risk Assessment Report is to present a desk-based review of available information on the mining issues which are relevant to the site, and to identify and assess the risks to the proposed development from mining legacy.
- 1.1.4 The object of the report is to demonstrate that the application site is, or can be made safe and stable to meet the requirements of national planning policy with regard to development on unstable land.
- 1.1.5 This report provides the findings of our examinations of the site, which have been based on researches of available geological and mining maps, plans and other records. The scope of the investigations has been restricted to fulfil the necessary enquiry regarding the mining context of the site alone. Whilst in the course of our examinations we have identified other aspects of the geology relevant to the development, we anticipate that these will be considered in separate investigations dedicated to the wider geo-environmental impacts.

1.2 **General Methodology**

- 1.2.1 As described, our examinations involved researches of various published documents on the geological and historical background to the site and reference to The Coal Authority and the British Geological Survey on the past mining in the area. We have some familiarisation with the area and the geological sequence and this knowledge was allied to the findings of our enquiries.
- 1.2.2 In assessing the potential site impacts, we considered typical mine stability assessments criteria and have reviewed the area relative to our expectations of the geological conditions. Our confidence in the geology and the potential impacts of mining are discussed relative to the quality of the data available to us, with recommendations provided on the scope of future intrusive investigations (if relevant).



4 border: 277 x 190





MESSRS MACFARLANE

2 HOUSTON MAINS DECHMONT WEST LOTHIAN EH52 6JY

PROJECT TITLE

MAIN STREET DECHMONT WEST LOTHIAN

AERIAL PHOTOGRAPH

14.05.14 G2014/166 G2014/166/MRA/R/F/03

masonevans

geo-environmental consultants

The Piazza, 95 Morrison Street, Glasgow, G5 8BE t: 0141 420 2025 f: 0141 420 2057

e: mail@masonevans.co.uk w. www.masonevans.co.uk



PROPOSED HOUSING MUS:

Persane Houses:
Cottage Flats: 6No.
Terraces Houses: 25No.
Semi-Getacles: Houses: 50No.
Detacles: Houses: 45No.
Total Persane units: 10No.

APPORTABLE HOLDING: TERRACED HOLDES: 9No. SEMI-DETACHED HOLDES: 10No. TOTAL APPORTABLE LINTS: 19No.

TOTAL No. OF UNITE: 120No.

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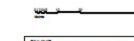
PARKING PROVISION

DETACHED HOUSING WITH CARAGES: 200%

DISTRICT / BOOK / STYRE GAOR SERSOA THROUGH UNITS SECTION CROSS Soate 1200







AMERICAN PROPERTY.

DECHMONT, WEST LOTHIAN.

TRUE
PROPOSED HOUSING DEVELOPMENT

CLARENDON PLANNING AND DEVELOPMENT LTD. EXCHANGE PLACE 2 5-SEMPLE STREET EDINBURGH EH3-6BL T/F-0-081-806-01-15

MAT 2014 /500 @ AO



PEDESTRIAN / CYCLE

A 89

DECHMONT ROUNDABOUT

RELOCATE 30MPH GATEWAY FEATURE

1.3 Context

1.3.1 It should be recognised that this report is prepared in accordance with current recommended practice and existing legislation. It is written in the context of the proposed residential development previously described. Should there be any alternative end-use, it would be prudent to consult us further to ensure the continued pertinence of the recommendations advised.

2.0 SITE LOCATION AND DESCRIPTION

2.1 Site Details

2.1.1 The summary details of the site as understood from supplied information (please note that no site visit has been undertaken) are as follows:

• Existing Site Name - Main Street, Dechmont, West Lothian

Local Authority - West Lothian Council
 Site Area - approximately 5.57 Ha

Location — The site is located to the east of Dechmont, to the immediate

south of Main Street and to the immediate west of the A899.

• Current Usage - Undeveloped, unoccupied land with disused buildings in the

north of the site.

Topography
 Conjectured to be generally flat lying.



(Plate 1: Site Location - courtest of Google, 2014)

3.0 **HISTORICAL BACKGROUND**

3.1 General

3.1.1 An examination of the past history of a site can often provide valuable information in relation to potential constraints to its development. In this particular instance, our focus has been to establish evidence of any mining within the site or immediate environs. To facilitate these investigations, past copies of Ordnance Survey maps and other historical data were examined. It should be noted that considerable periods elapsed between successive Ordnance Survey map editions and the possibility that mining activities took place on the land in the intervening years and were not therefore recorded by the maps, cannot be discounted. In these circumstances, while we have tried to ascertain the complete record of the site history, the possibility that historical mining activities took place but were undisclosed by our researches, cannot be discounted.

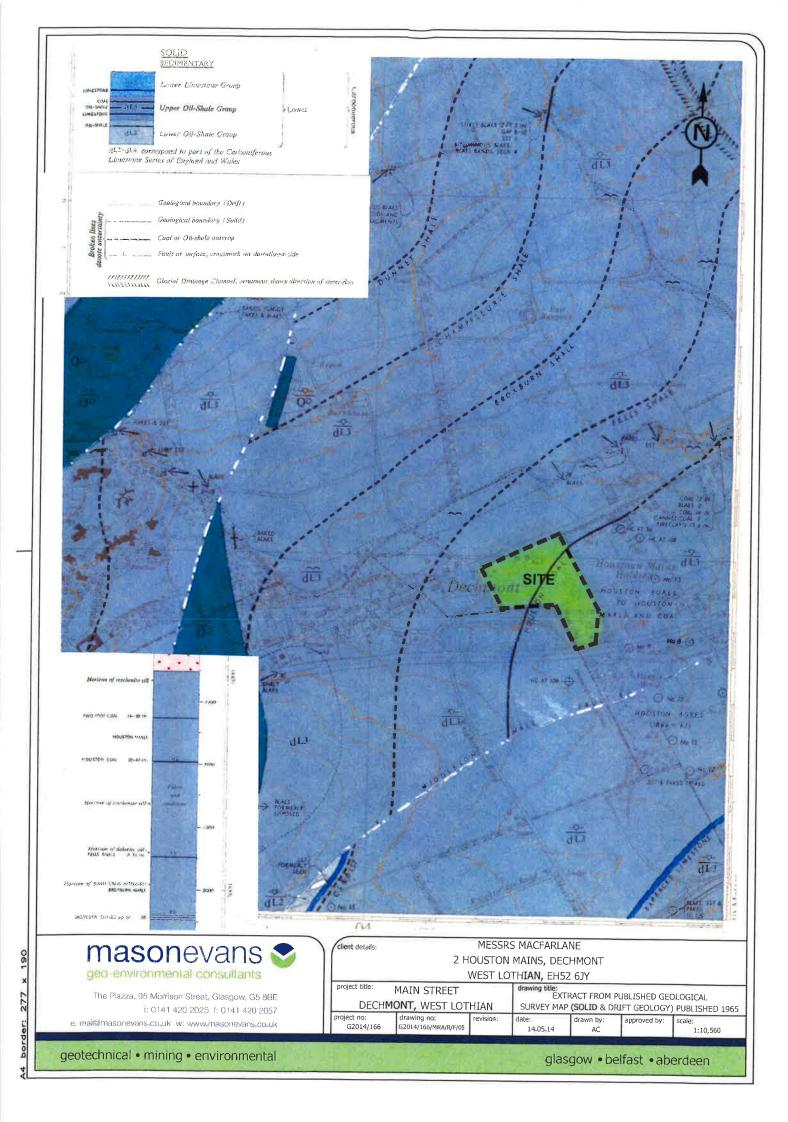
3.2 Historical Background

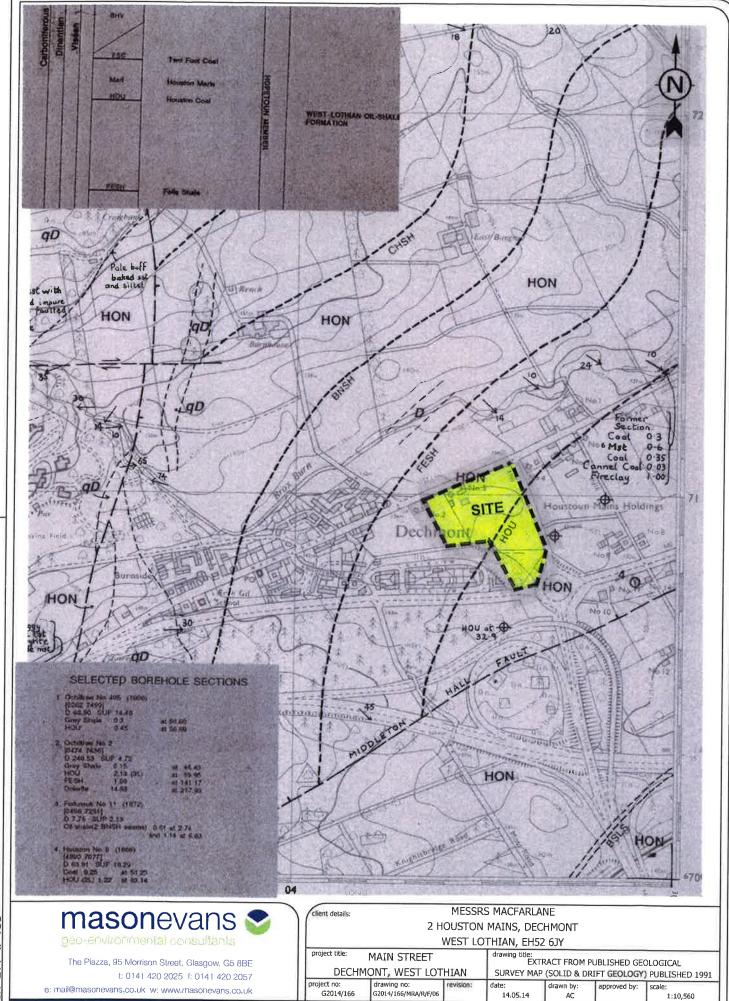
- 3.2.1 During the course of our assessments, we examined available historical Ordnance Survey map records. Copies of the assessed Ordnance Survey map records are included for reference in Appendix A.
- 3.2.2 Map editions dated 1856, 1897, 1897-98, 1915-17, 1922, 1938-52, 1955, 1957-58, 1961-72, 1966-70, and 1976-95 were assessed and evidence of historical mining was noted as follows:
 - Houston Colliery with old an old shaft, located approximately 740 m to the north east of the site close to Uphall (1856). Colliery is no longer noted on maps from 1897 onwards.
 - Forkneuk shale pit located 1100 m to the north east to the north of Uphall (1897-1898).
 - Uphall Oil Works located to the south of Uphall (1922).
- 3.2.3 In summary, a review of available historical Ordnance Survey maps has recorded no surface evidence of coal or other underground mining within the site boundaries. However, there was evidence of mining activities having taken place in the immediate and wider surrounding areas.

4.0 **SITE GEOLOGY AND MINING**

4.1 General

- 4.1.1 Researches of the British Geological Survey (BGS) maps and databases records that the site is underlain by glacial till (boulder clay), to depths of approximately 20 m (refer to historic bore No 4 as noted on Drawing No G2014/166/MRA/06).
- 4.1.2 The underlying rock strata is recorded as the Carboniferous aged Hopetoun Member of the West Lothian Oil-shale Formation, dipping to the south east (refer to Drawing Nos G2014/166/MRA/05 and 06). The Hopetoun Member typically consists of sedimentary units of sandstone, siltstone, mudstone, marls, ironstones and limestones, with coal and oil-shale seams.
- 4.1.3 In particular, the Houston Coal is recorded to outcrop below the central site area, the Fells Shale approximately 100 m to the north-west of the site boundary, the Broxburn Shale approximately 400 m to the north-west, the Champfleurie Shale approximately 650 m to the north west, and the Dunnet Shale approximately 950 m to the north west.
- 4.1.4 The Houston Coal is present at increasing depths below the central and south eastern areas of the site, and on the 1965 published map the outcrop is recorded as a solid line which indicates 'certainty' about location (refer to Drawing No G2014/166/MRA/05).
- 4.1.5 The 1991 published map (refer to Drawing No G2014/166/MRA/06) records an abandoned pit shaft approximately 40 m to the east of the site, with a second pit located approximately 200 m to the east of the site and a third abandoned pit located approximately 150 m to the south, in which the Houston Coal was noted at 32.9 metres depth.
- 4.1.6 Historical boreholes located within the site area (NT07SW9731/1, 2, 3 and 4 refer to Appendix E) generally record sandy CLAY underlain by (boulder) CLAY to depths of 17 m to 20 m, underlain by sandstones and mudstones with ironstone and marl. There is no evidence within these boreholes of mining activities even though they were sunk to a maximum depth of 35 m.
- 4.1.7 Historical borehole records for the surrounding area also generally record sandy clay underlain by boulder clay, underlain by sedimentary strata. Borehole No NT07SW93 to the south east of the site records coally blaes at a depth of 28 fathoms (50 m), whilst there is no evidence of mining activities within any of the other boreholes.





glasgow • beifast • aberdeen

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geotechnical • mining • environmental

4.2 Mining History

- 4.2.1 Information relating to the thickness of underlying coal seams was obtained from the British Geological Survey (BGS), The Coal Authority, and old memoirs.
- 4.2.2 In our researches, we examined a report compiled by The Coal Authority (copy included in Appendix B). It confirms that the property is not within the zone of likely physical influence on the surface from recorded underground workings. However, the property is in an area where The Coal Authority believe there is coal at or close to the surface, which may have been worked in the past. It also records that no known mine entries exist within the site or within 20 m of the boundary.
- 4.2.3 From our researches, we consider that the Houston Coal is the shallowest economic seam below the site. Utilising information recorded on the solid geological maps (refer to Drawing Nos G2014/166/MRA/05 and 06), it is considered that this coal underlies the central site area at very shallow depths below rockhead, and is present at increasing depth towards the south and south east of the site due to the recorded rock strata dip direction.
- 4.2.4 The BGS Georeport (refer to Appendix C) states that the Houston Coal can be 'up to 2 m thick' and 'is known to have been worked locally in the past'. There is no indication that the seam has been worked beneath the site, but the report states that the a borehole located 130 m to the north east of the site records Houston Coal 'waste' at depths of approximately 25 m (i.e. 5 m below rockhead) and that a BGS Geology for Land Use Planning map recorded old workings at an excavation approximately 100 m to the south west of the site.
- 4.2.5 The BGS report does not raise any concerns regarding mining activities at the level of any of the West Lothian oil shales.
- 4.2.6 We have also researched the following documents: (1) Economic Geology of Central Coalfield of Scotland, relating to this area Area VI, Bathgate, Wilsontown, Fauldhouse, Shotts, Harthill, Armadale and Westercraigs, dated 1923, and (2) Memoirs of the Geological Survey Scotland, The Oil-Shales of the Lothians, dated 1912. The memoirs recount and verify that the Houston Coal has been worked in the area and records that the Houston Coal was "practically the lowest bed of workable coal in the Scottish Carboniferous system". The memoirs also state that it was 'formerly extensively wrought near the surface' but that the coal is 'pyritous, of inferior quality and on account of it's bad roof and soft pavement and the quantity of bales interbedded with it, has seldom in recent years proved renumerative'. Extracts from the memoirs are included in Appendix E.
- 4.2.7 There are no records of mine gas emissions requiring action by The Coal Authority within the boundary of the site (refer to information included in Appendix B).
- 4.2.8 There is no record of mine entries within the site, but several abandoned pit shafts are recorded in the surrounding area (refer to Drawing No G2014/166/MRA/06).

5.0 IDENTIFICATION AND ASSESSMENT OF SITE SPECIFIC COAL MINING RISKS

5.1 Risk Assessment

5.1.1 The table below has been derived from our researches, highlighting the risk relating to historical mineworkings at the proposed development area.

Table 1: Coal Mining Issues Risk Assessment

Coal Mining Issue	Yes	No	Risk Assessment
Underground mining <i>(Ref 2, 3 & 4)</i>		×	Moderate – There are no workings recorded to underlie the site. However, the Houston Coal (up to 2 m thick) is recorded to outcrop below the site and
onderground mining (Rei 2, 3 & 4)		*	there is evidence of this seam being worked in the wider area, so there is potential for shallow unrecorded workings below the central and southern site areas.
Mine entries (shafts and adits) (Ref 1 to 4)	×	✓	Low - Coal Authority has no record of mine entries within the site area. However, recorded mine entries are known to exist in the surrounding area.
Record of past mine gas emissions (Ref 3)	×	1	Low
Surface mining (opencast workings) (Ref 1 to 4)	×	1	Low

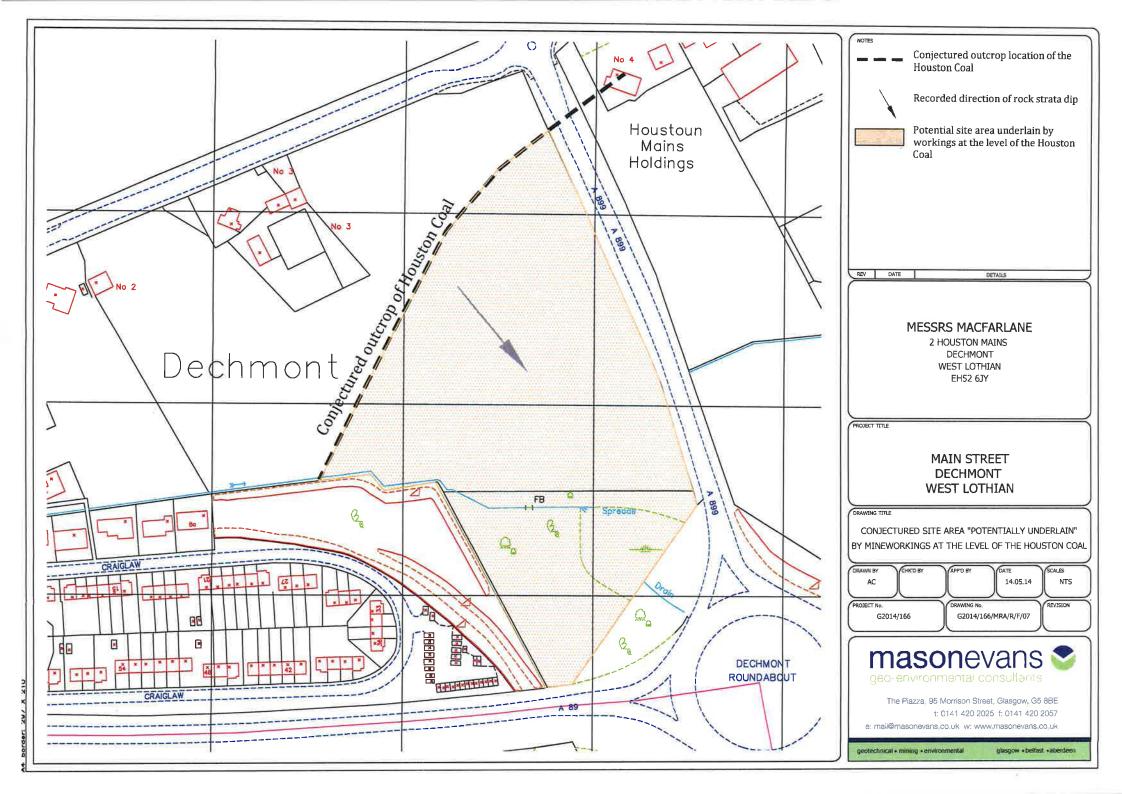
Ref 1: Ordnance Survey Historical Maps (Appendix A)

Ref 2: BGS Geological Map - NT07SW (Drawing No G2014/166/CMRA/04)

Ref 3: Coal Authority Report - Ref 51000516936003, dated 25 April 2014 (Appendix B)

Ref 4: BGS Georeport (No. GR_208664/1)

- 5.1.2 Our researches have indicated that there are no 'recorded' coal workings beneath the site, but that there is the potential for unrecorded workings to exist at the level of the Houston Coal.
- 5.1.3 We conjecture that the shallowest coal seam below the site is the Houston Coal, considered to be present at shallow depths below rockhead, below the central site area, becoming deeper in a south-easterly direction. There is no record of this seam having been worked beneath the site itself, but information obtained from the BGS and historical memoirs indicates that there are workings within the seam in the surrounding area and therefore the potential for shallow 'unrecorded' workings exists. Drawing No G2014/166/MRA/07 indicates the conjectured area of the site, underlain by potential mineworkings at the level of the Houston Coal, although if workings exist it is considered that only the central site area would potentially be subject to potential ground instability.
- 5.1.4 There are no recorded mine entries within the site, although several are noted in the immediate surrounding area (refer to Drawing No G2014/166/MRA/06 and Appendix C).



5.2 Conclusions

- 5.2.1 In summary, we conclude that the central site area could be affected by unrecorded shallow mineworkings at the level of the Houston Coal, as supported by evidence of workings in the surrounding area. However, older strata such as the Fells Shale are not considered to present a risk to ground stability (below the northern site area) associated with historical mining activities.
- 5.2.2 In view of the uncertainties on the mining conditions at the site, information will be required through dedicated mineral investigations, within the central and south-eastern site areas.
- 5.2.3 Should the investigations confirm a site area to be unstable, treatment to secure the workings can be undertaken through conventional drilling and grouting, designed to stabilise building footprints. Usually treatment will be not required to address car parking areas or other hardstanding as any surface expressions are unlikely to present significant subsidence to such features within the proposed development.
- 5.2.4 Prior to the commencement of any investigations or treatment, permission will be required from The Coal Authority to penetrate coal seam(s). This is a standard (and legal) requirement in all coal mining investigations.
- 5.2.5 There are no records of mine entries within the site, although BGS maps show three abandoned pit shafts in the surrounding area; 40 m to the east, 200 m to the east and 150 m to the south of the site respectively. As in all areas of historical mining, the possible presence of unrecorded mine entries exists and vigilance should be maintained at all times, for such features, during any future site works.



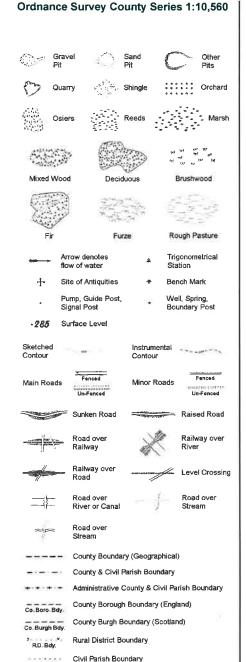
Patrick Barry

Director

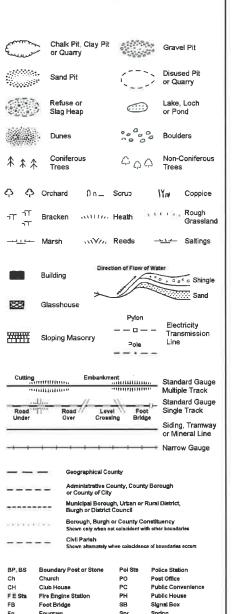
Appendix A

Historical Ordnance Survey Map Records (dated 1856 to 2014)

Historical Mapping Legends



Ordnance Survey Plan 1:10,000



TCB

TCP

GΡ

Guide Post

Mile Post

Telephone Call Box

Telephone Call Post

1:10,000 Raster Mapping

Refuse tip

or slag heap

Gravel Pit

			•
	Rock		Rock (scattered)
	Boulders	*.* * .	Boulders (scattered)
250	Shingle	Mud	Mud
Sand	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
200	Area of wooded vegetation	00 00	Non-coniferous trees
۵	Non-coniferous trees (scattered)	· 本本	Coniferous trees
*	Coniferous trees (scattered)	9	Positioned tree
ф ф ф ф	Orchard		Coppice or Osiers
,1Tr	Rough Grassland		Heath
On_	Scrub	<u>M</u> is	Marsh, Salt Marsh or Reeds
co	Water feature		Flow arrows
MHW(S)	Mean high water (springs)	MLW(S)	Mean low water (springs)
	Telephone line (where shown)		Electricity transmission lin (with poles)
BM 123 45 m	Bench mark (where shown)	Δ	Triangulation station
	Point feature	528	Pylon, flare stad

(e.g. Guide Post

Site of (antiquity)

General Building

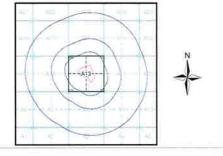
or Mile Stone)

MASON EVANS **PARTNERSHIP**

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Edinburghshire	1:10,560	1853	2
Linlithgowshire	1:10,560	1856	3
Edinburghshire	1:10,560	1895	4
Linlithgowshire	1:10,560	1897 - 1898	5
Edinburghshire	1:10,560	1908 - 1909	6
Historical Aerial Photography	1:10,560	1950	7
Linlithgowshire	1:10,560	1952	8
Ordnance Survey Plan	1:10,000	1957 - 1958	9
Ordnance Survey Plan	1:10,000	1957	10
Ordnance Survey Plan	1:10,000	1966	11
Ordnance Survey Plan	1;10,000	1970	12
Ordnance Survey Plan	1:10,000	1976	13
Ordnance Survey Plan	1:10,000	1983 - 1984	14
Ordnance Survey Plan	1:10,000	1991 - 1995	15
10K Raster Mapping	1:10,000	2006	16
VectorMap Local	1:10,000	2014	17

Historical Map - Slice A



Order Details

55645951_1_1 Order Number: G2014/166 Customer Ref: National Grid Reference: 304510, 670920 Slice: Site Area (Ha): 1000 Search Buffer (m):

Site Details

or lighting tower

Glasshouse

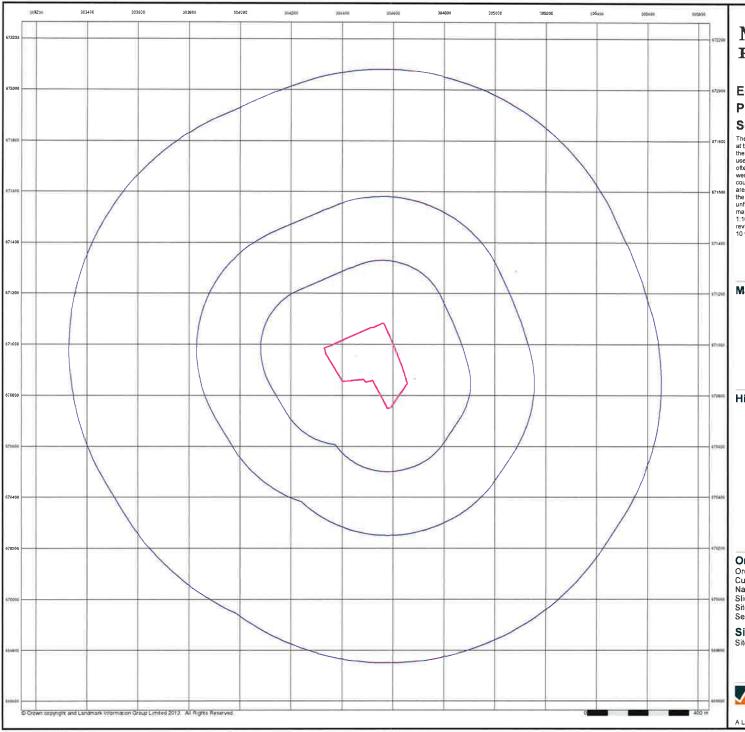
Building

Site at 304460, 670950



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A Landmark Information Group Service v47.0 25-Apr-2014 Page 1 of 17



Edinburghshire Published 1853

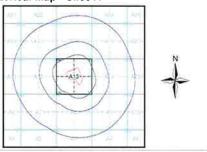
Source map scale - 1:10,560

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)



Historical Map - Slice A



Order Details

Order Number: 55645951_1_1 G2014/166 Customer Ref: National Grid Reference: 304510, 670920 Slice: Site Area (Ha): Search Buffer (m):

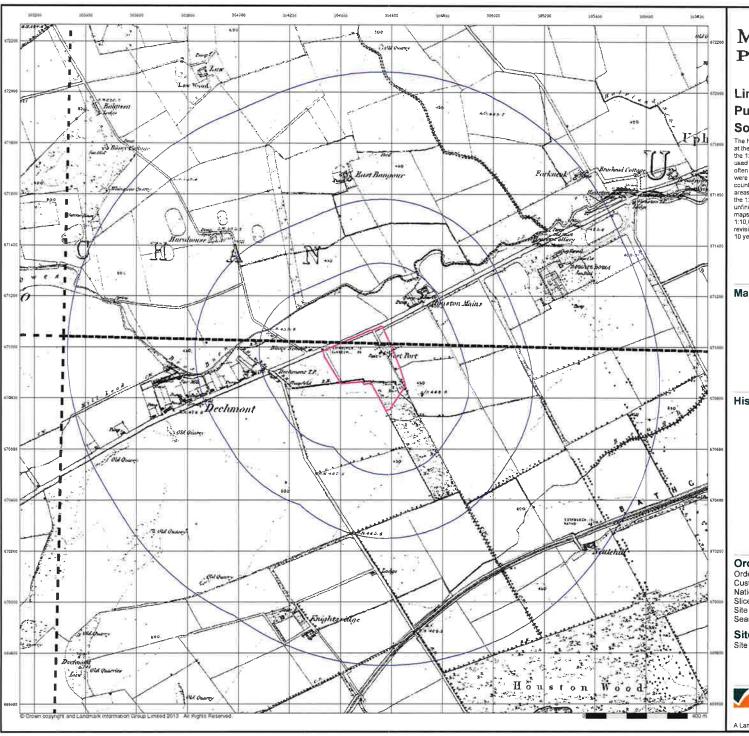
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Site Details Site at 304460, 670950



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A Landmark Information Group Service v47.0 25-Apr-2014 Page 2 of 17

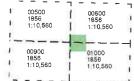


Linlithgowshire Published 1856

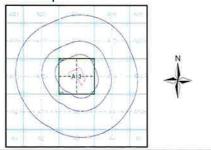
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 55645951_1_1
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National Grid Reference: 304510, 670920
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Site Area (Ha): 5.57 Search Buffer (m): 1000

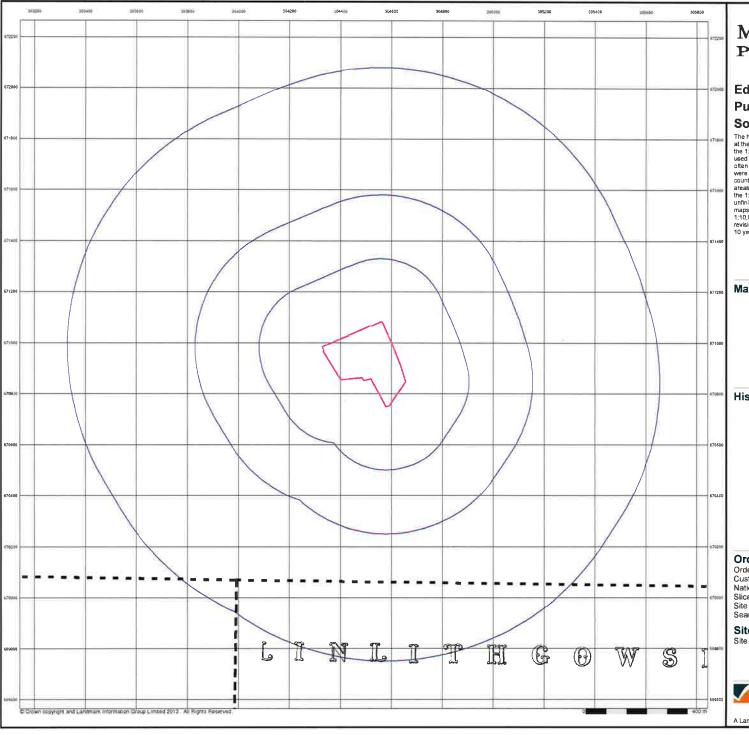
Site Details

Site at 304460, 670950



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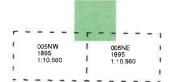


Edinburghshire Published 1895

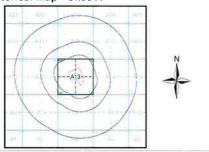
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 55645951_1_1 Customer Ref: G2014/166 National Grid Reference: 304510, 670920 Site Area (Ha):

Search Buffer (m): 1000

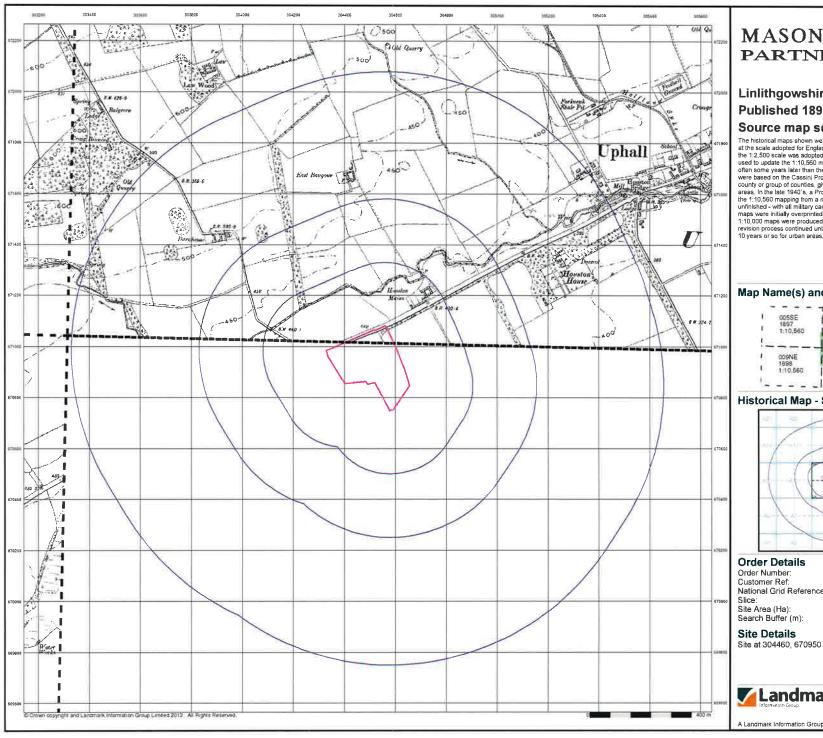
Site Details

Site at 304460, 670950



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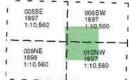
A Landmark Information Group Service v47.0 25-Apr-2014 Page 4 of 17



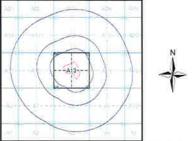
Linlithgowshire Published 1897 - 1898 Source map scale - 1:10,560

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)



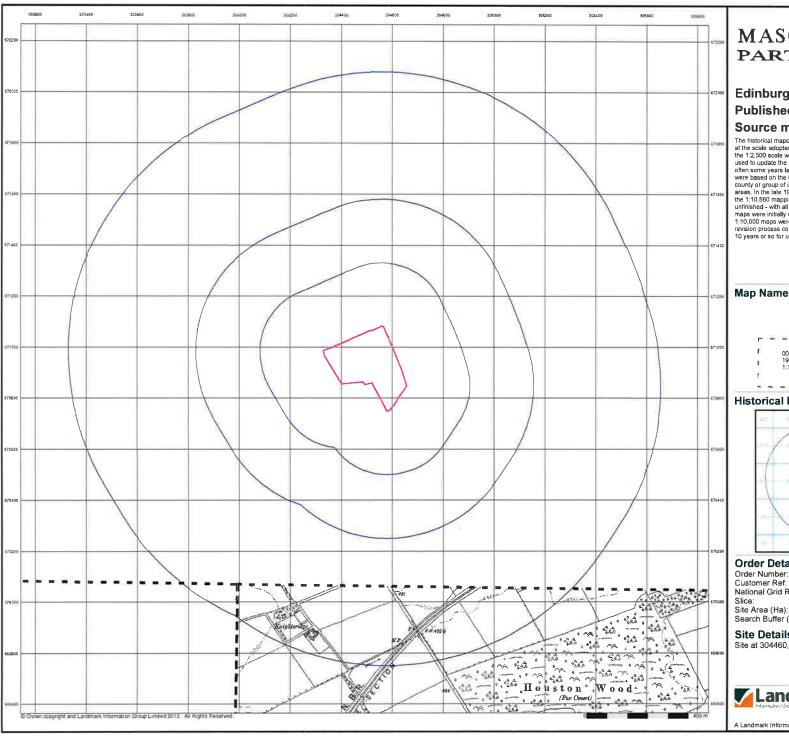
Historical Map - Slice A



55645951_1_1 G2014/166 National Grid Reference: 304510, 670920



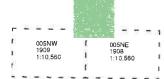
A Landmark Information Group Service v47.0 25-Apr-2014 Page 5 of 17



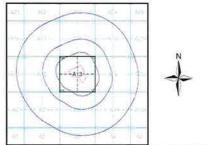
Edinburghshire Published 1908 - 1909 Source map scale - 1:10,560

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)



Historical Map - Slice A



Order Details

55645951_1_1 G2014/166 Customer Ref: National Grid Reference: 304510, 670920 5.57

Site Area (Ha): Search Buffer (m): 1000

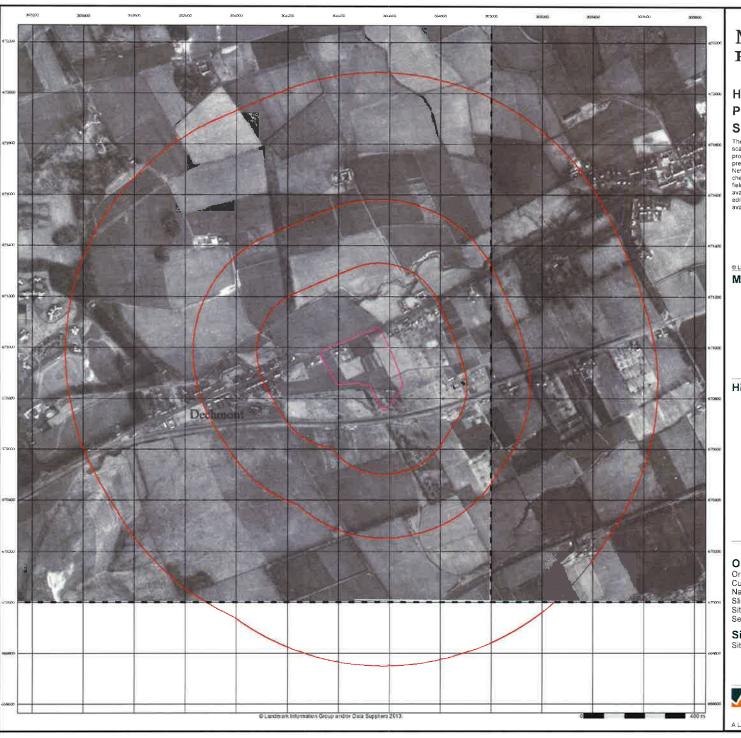
Site Details

Site at 304460, 670950



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A Landmark Information Group Service v47.0 25-Apr-2014 Page 6 of 17

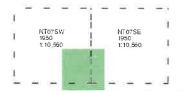


Historical Aerial Photography Published 1950 Source map scale - 1:10,560

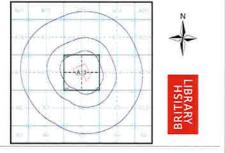
The Historical Aerial Photos were produced by the Ordnance Survey at a scale of 1:1,250 and 1:10,500 from Air Force photography. They were produced between 1944 and 1951 as an interim measure, pending preparation of conventional mapping, due to post war resource shortages, New security measures in the 1950s meant that every photograph was rechecked for potentially unsafe information with security sites replaced by fake fields or clouds. The original editions were withortawn and only later made available after a period of fifty years although due to the accuracy of the editing, without viewing both revisions it is not easy to spot the edits. Where available andmark have included both revisions,

© Landmark Information Group and/or Data Suppliers 2010

Map Name(s) and Date(s)



Historical Aerial Photography - Slice A



Order Details

Order Number: 55645951_1_1
Customer Ref: G2014/166
National Grid Reference: 304510, 670920
Slice: A
Site Area (Ha): 5,57
Search Buffer (m): 1000

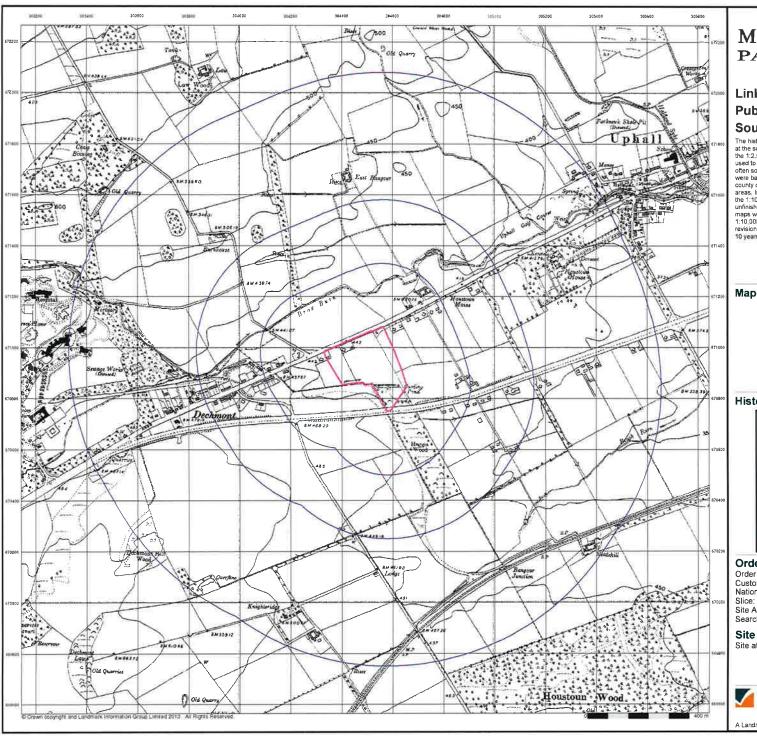
Site Details

Site at 304460, 670950



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A Landmark Information Group Service v47.0 25-Apr-2014 Page 7 of 17

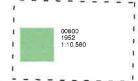


Linlithgowshire Published 1952

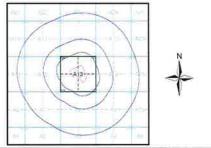
Source map scale - 1:10,560

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 112,500 scale was adopted for mapping urban areas; these maps were used to update the 11:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1939, 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)



Historical Map - Slice A



Order Details

 Order Number:
 55645951_1_1

 Customer Ref:
 G2014/166

 National Grid Reference:
 304510, 670920

 Slice:
 A

Site Area (Ha): 5,57 Search Buffer (m): 1000

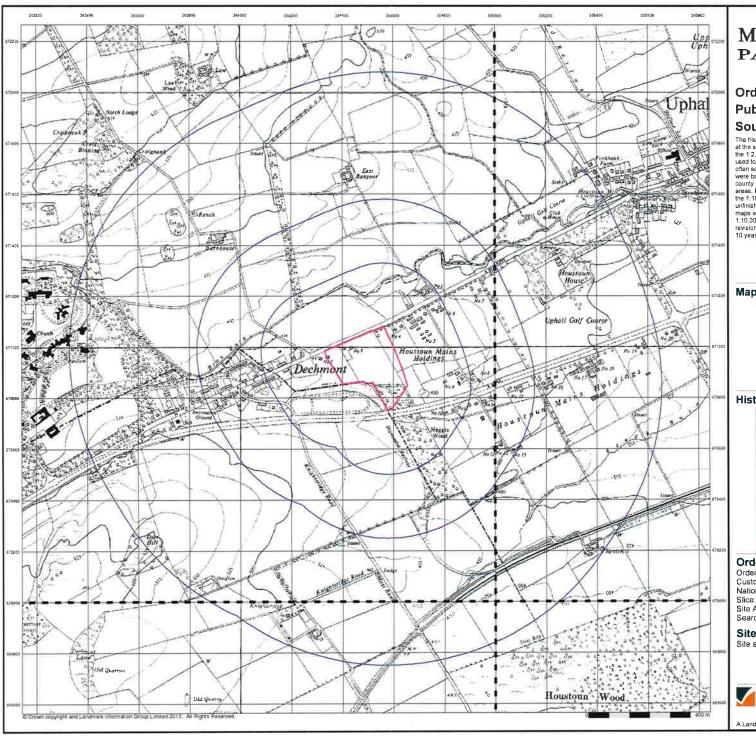
Site Details

Site at 304460, 670950



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A Landmark Information Group Service v47.0 25-Apr-2014 Page 8 of 17





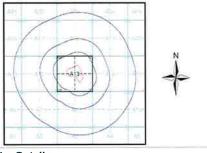
Ordnance Survey Plan Published 1957 - 1958 Source map scale - 1:10,000

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 11.2,500 scale was adopted for mapping urban areas: these maps were used to update the 11.0,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1838. 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 110,560 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 11.0,000 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)

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1	NTO6N V	v I	NTO	NE	ι
- 1	1957	, 1	1957	560	ı
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Historical Map - Slice A



Order Details

Order Number: 55645951_1_1
Customer Ref: G2014/166
National Grid Reference: 304510, 670920
Slice: A

Order Number: 55645951_1_1
G2014/166

A

Order Number: 55645951_1
G2014/166

A

Order Numb

Site Area (Ha): 5.57 Search Buffer (m): 1000

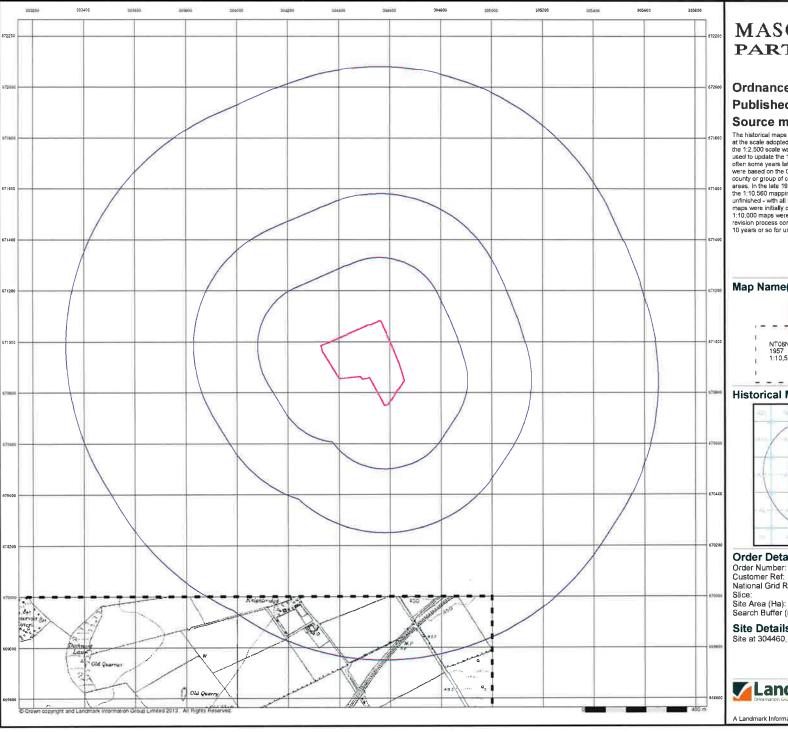
Site Details

Site at 304460, 670950



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A Landmark Information Group Service v47.0 25-Apr-2014 Page 9 of 17



Ordnance Survey Plan Published 1957

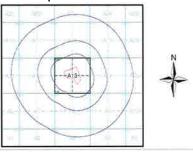
Source map scale - 1:10,000

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)



Historical Map - Slice A



Order Details

55645951_1_1 Customer Ref: National Grid Reference: 304510, 670920 Slice:

G2014/166 5.57

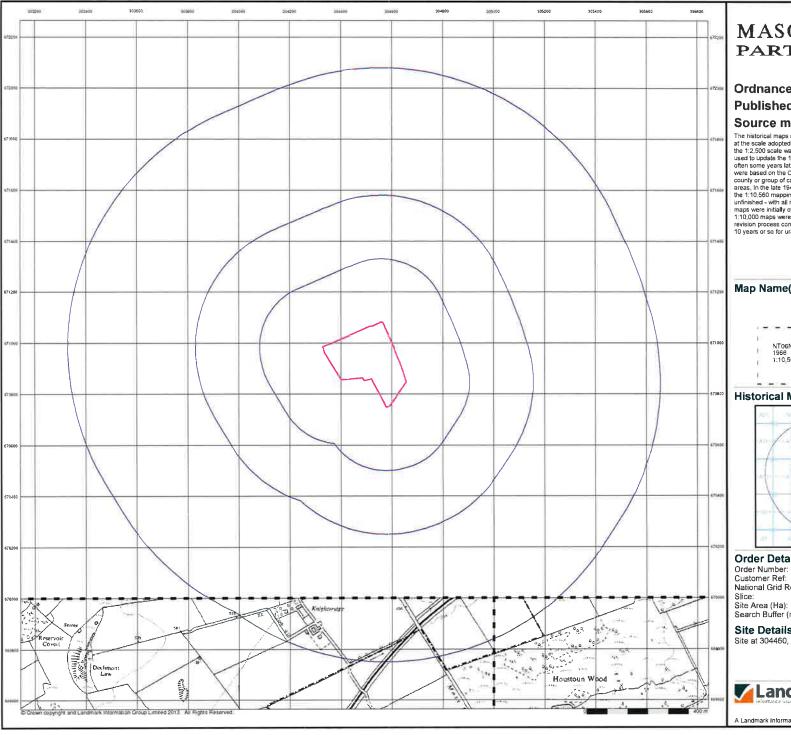
Site Area (Ha): Search Buffer (m):

Site Details

Site at 304460, 670950



A Landmark Information Group Service v47.0 25-Apr-2014 Page 10 of 17

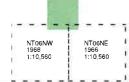


Ordnance Survey Plan Published 1966

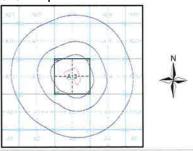
Source map scale - 1:10,000

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)



Historical Map - Slice A



Order Details

55645951_1_1 G2014/166 Customer Ref: National Grid Reference: 304510, 670920

Site Area (Ha): 5.57 Search Buffer (m):

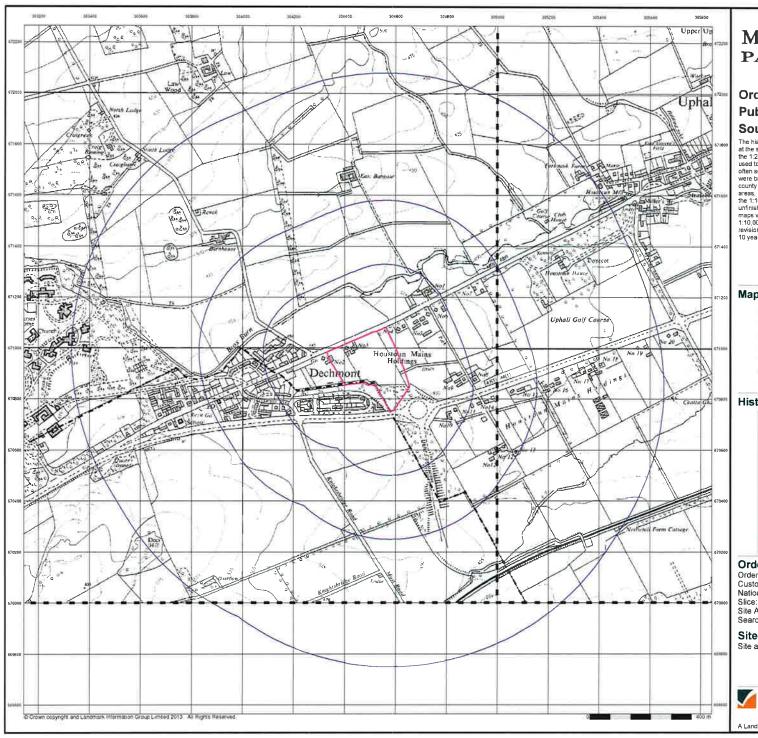
Site Details

Site at 304460, 670950



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A Landmark Information Group Service v47.0 25-Apr-2014 Page 11 of 17

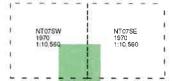


Ordnance Survey Plan Published 1970

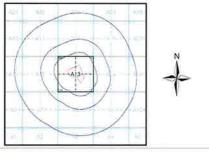
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840s. In 1854 the 12,500 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 Grad. 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)



Historical Map - Slice A



Order Details

Order Number: 55645951_1_1 Customer Ref: G2014/166 National Grid Reference: 304510, 670920 Slice: A Site Area (Ha): 5.57

Site Area (Ha): 5.57 Search Buffer (m): 1000

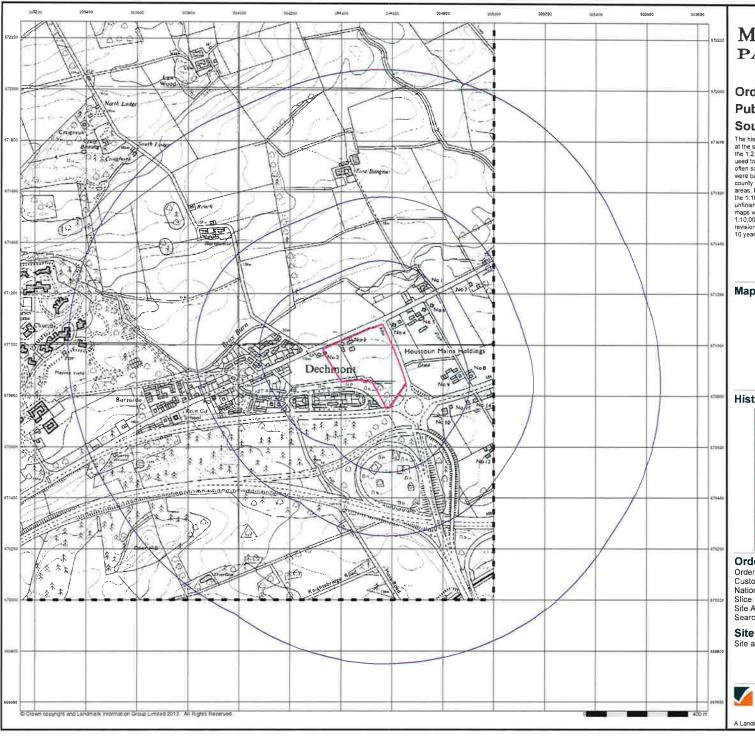
Site Details

Site at 304460, 670950



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A Landmark Information Group Service v47.0 25-Apr-2014 Page 12 of 17

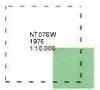


Ordnance Survey Plan Published 1976

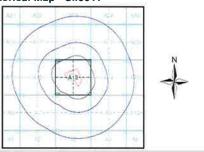
Source map scale - 1:10,000

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 12,500 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 1839, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of countiles, 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 untinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Graf, 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)



Historical Map - Slice A



Order Details

 Order Number:
 55645951_1_1

 Customer Ref:
 G2014/166

 National Grid Reference:
 304510, 670920

 Slice:
 A

 Site Area (Ha):
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Site Area (Ha): 5.57 Search Buffer (m): 1000

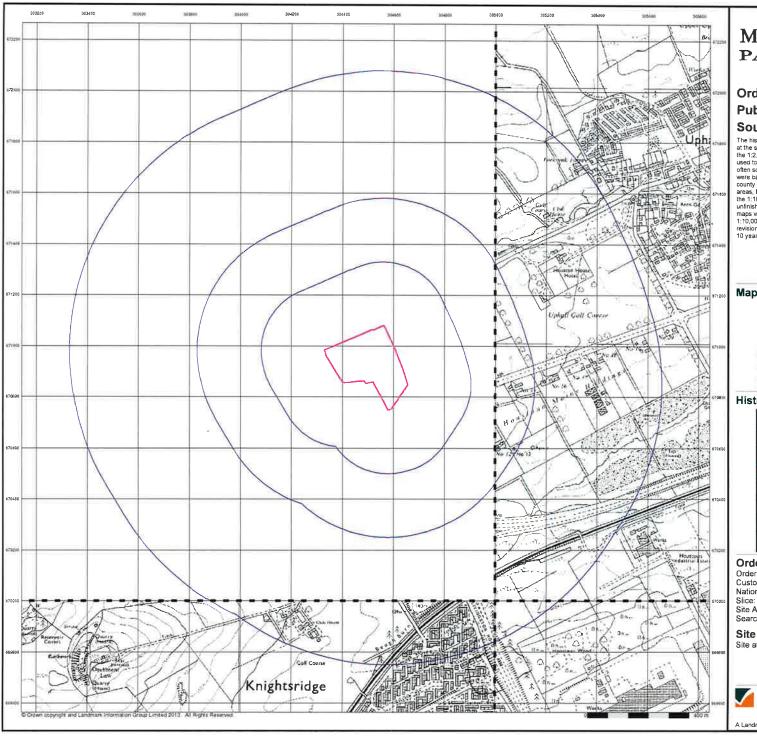
Site Details

Site at 304460, 670950



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A Landmark Information Group Service v47,0 25-Apr-2014 Page 13 of 17



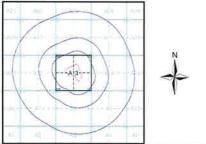
Ordnance Survey Plan Published 1983 - 1984 Source map scale - 1:10,000

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 12,500 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 inacouracies 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 Gnd, in 1970, the first 1:0,000 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)



Historical Map - Slice A



Order Details

Order Number: 55645951_1_1
Customer Ref: G2014/166
National Grid Reference: 304510, 670920
Slice: A
Site Area (Ha): 5.57

Site Area (Ha): 5.57 Search Buffer (m): 1000

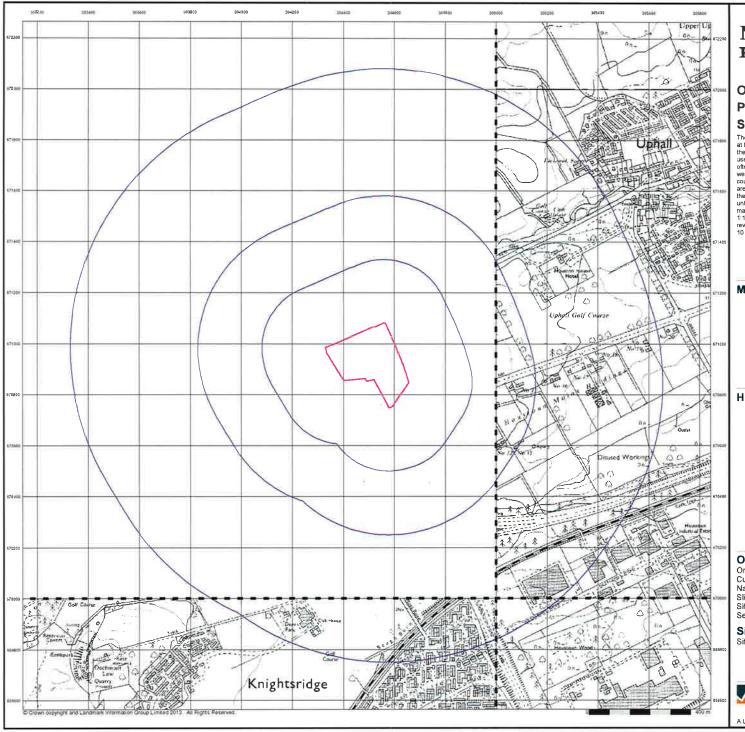
Site Details

Site at 304460, 670950



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A Landmark Information Group Service v47.0 25-Apr-2014 Page 14 of 17





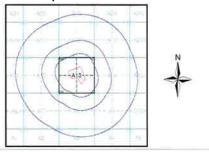
Ordnance Survey Plan Published 1991 - 1995 Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1954 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)



Historical Map - Slice A



Order Details

Order Number: 55645951_1_1 Customer Ref: National Grid Reference: 304510, 670920 Slice:

G2014/166

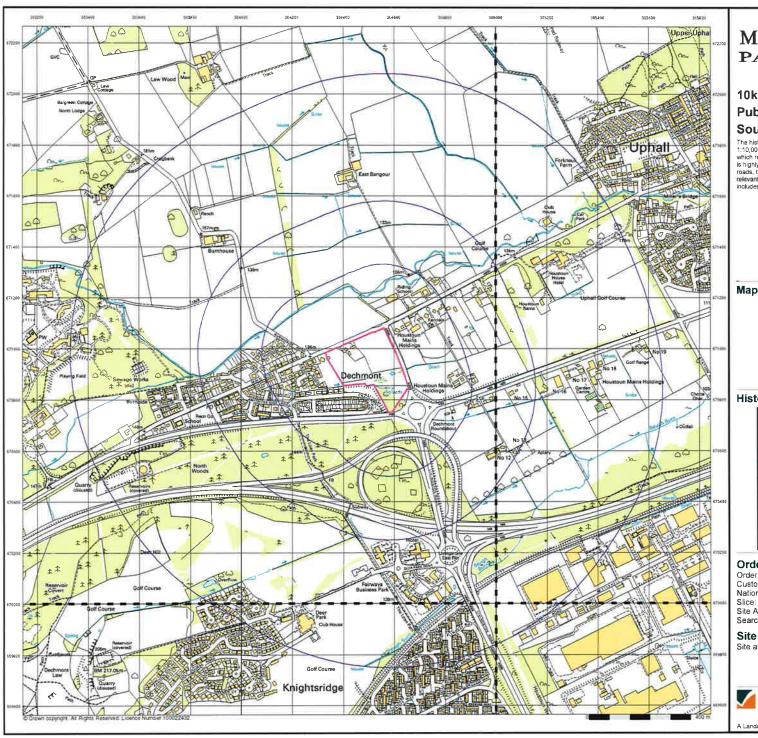
5.57 Site Area (Ha): Search Buffer (m):

Site Details

Site at 304460, 670950



A Landmark Information Group Service v47₁0 25-Apr-2014 Page 15 of 17



10k Raster Mapping Published 2006

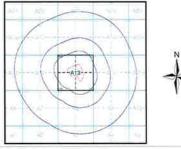
Source map scale - 1:10,000

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, lences and field boundanes 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)

NT07SW	NT07SE
2006	2006
1:10.09Gm	1:10,000
NT05NW	NT06NE
2006	2006
1:10.000	1:10.000

Historical Map - Slice A



Order Details

Order Number: 55645951_1_1
Customer Ref: G2014/166
National Grid Reference: 304510, 670920
Slice: A
Site Area (Ha): 5.57

Site Area (Ha): 5.57 Search Buffer (m): 1000

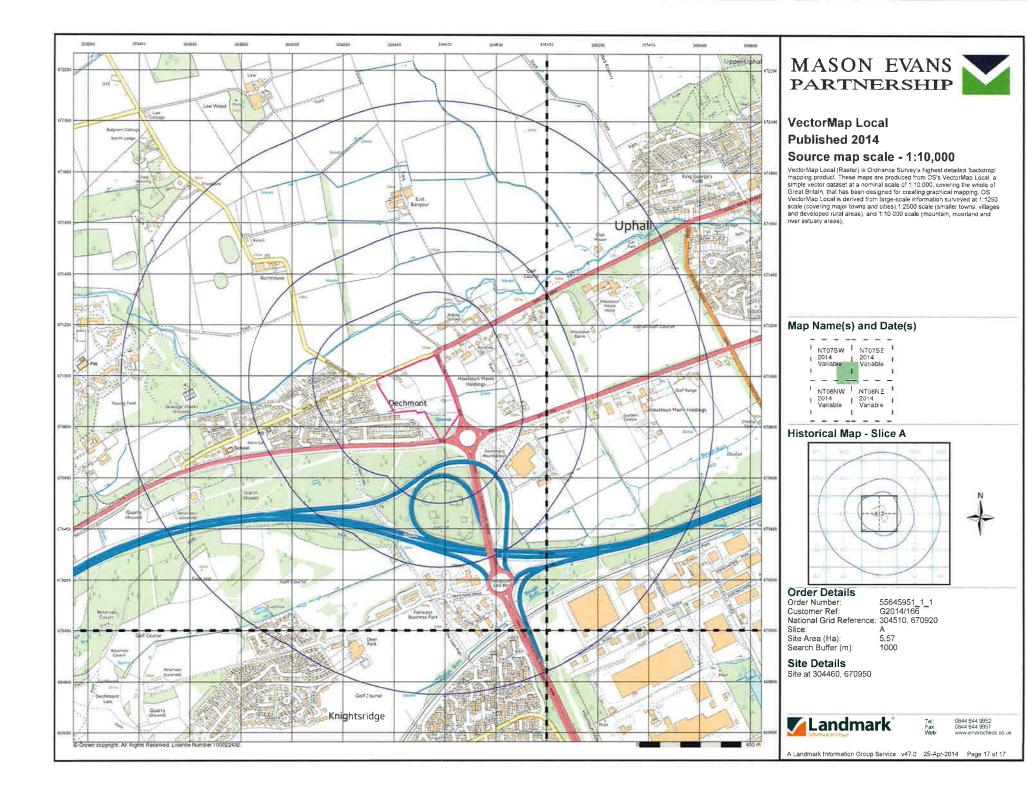
Site Details

Site at 304460, 670950



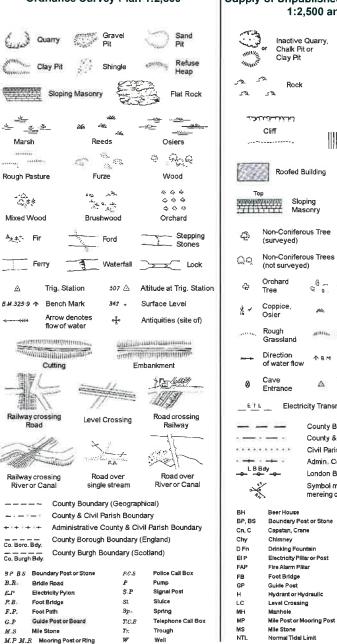
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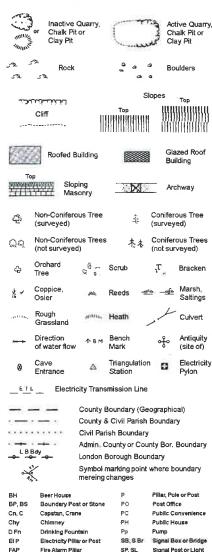


Historical Mapping Legends

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



Ordnance Survey Plan, Additional SIMs and Large-Scale National Grid Data 1:2,500 and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



Tank or Track

Trough

WrPt WrT WaterPoint WaterTap

Wind Pump

TCB

TCP

Wd Pp

Hydrant or Hydraulic

Manhole

Telephone Call Box

Telephone Call Post

1:1,250

	Clift لامغىدىلىلىت			8	Slopes	Тор
			1	Тор		
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	2	Positioned	l Boulder		Scree	
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	ਹੋਰੱ	Non-Conit (not surve	ferous Tree yed)	· 大夫	Conifer (not sur	ous Trees veyed)
	4	Orchard Tree	و آ آ	Scrub	ıΥ	Bracken
	# ~	Coppice, Osier	Ma	Reeds	<u> </u>	Marsh, Saltings
	- posto,	Rough Grassland	μипь,	Heath	1	Culvert
	140	Direction of water fl		Triangulation	on 😽	Antiquity (site of)
	E <u>l</u> L_	_ Electric	city Transmi	ssion Line		Electricity Pylon
	/ _E / BA	1 231.60m E	Bench Mark	7		gs with ig Seed
		Roofe	ed Building			lazed Roof uilding
	* *		Civil parisl	n/community	boundary	
	_	_	District bo	undary		
	***		County bo	undary		
		47	Boundary	post/stone		
	20		Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)			
	Bks	Barracks		Р		ole or Post
	Bty	Battery		PO	Post Off	
	Cerny	Cemetery		PC	Public C	convenience

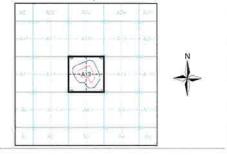
Bks	Barracks	Р	Pillar. Pole or Post	
Bty	Battery	PO	Post Office	
Cerny			Public Convenience	
Chy	Chimney	PC Po	Pump	
Cla	Cistern	Ppg Sta	Pumping Station	
Dismtd Riy		PW	Place of Worship	
El Gen Sta	Electricity Generating Station	Sewage Pp	og Sta Sewage Pumping Station	
EIP	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge	
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light	
FB	Filter Bed	Spr	Spring	
Fn/DFn	Fountain / Drinking Ftn.	Tk	Tank or Track	
Gas Goy	Gas Valve Compound	Tr	Trough	
GVC	Gas Governer	Wd Pp	Wind Pump	
GP	Gulde Post	WrPt, WrT	Water Point, Water Tap	
MH	Manhole	Wks	Works (building orares)	
MP. MS	Mile Past or Mile Stone	w	Well	

MASON EVANS **PARTNERSHIP**

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Linlithgowshire	1:2,500	1856	2
Linlithgowshire	1:2,500	1856	3
Lintithgowshire	1:2,500	1856	4
Linlithgowshire	1:2,500	1897	5
Linlithgowshire	1:2,500	1915	6
Ordnance Survey Plan	1:2,500	1955	7
Ordnance Survey Plan	1:2,500	1961 - 1972	8
Supply of Unpublished Survey Information	1:2,500	1975	9
Ordnance Survey Plan	1:2,500	1976	10
Additional SIMs	1:2,500	1990	11
Additional SIMs	1:2,500	1991	112
Large-Scale National Grid Data	1:2,500	1992	13
Large-Scale National Grid Data	1:2,500	1995	14
Large-Scale National Grid Data	1:2,500	1996	15
Large-Scale National Grid Data	1:2.500	1996	: 16

Historical Map - Segment A13



Order Details

55645951_1_1 Order Number: Customer Ref: G2014/166 National Grid Reference: 304510, 670920

Site Area (Ha): 5.57 Search Buffer (m): 100

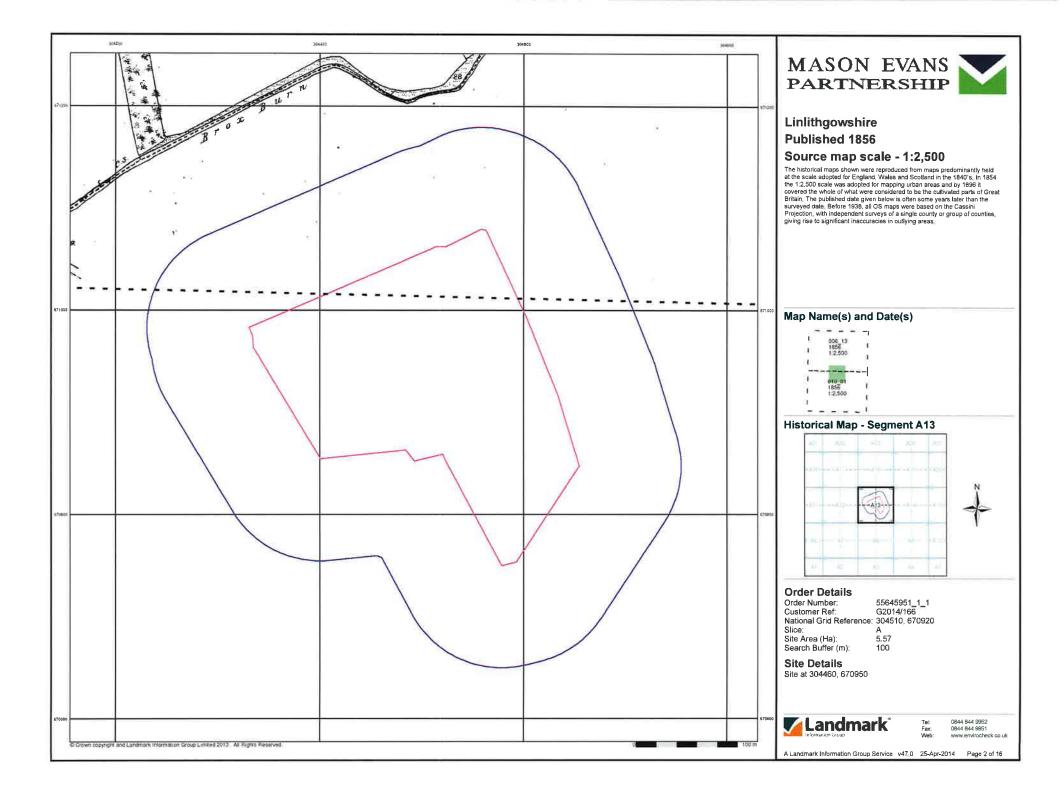
Site Details

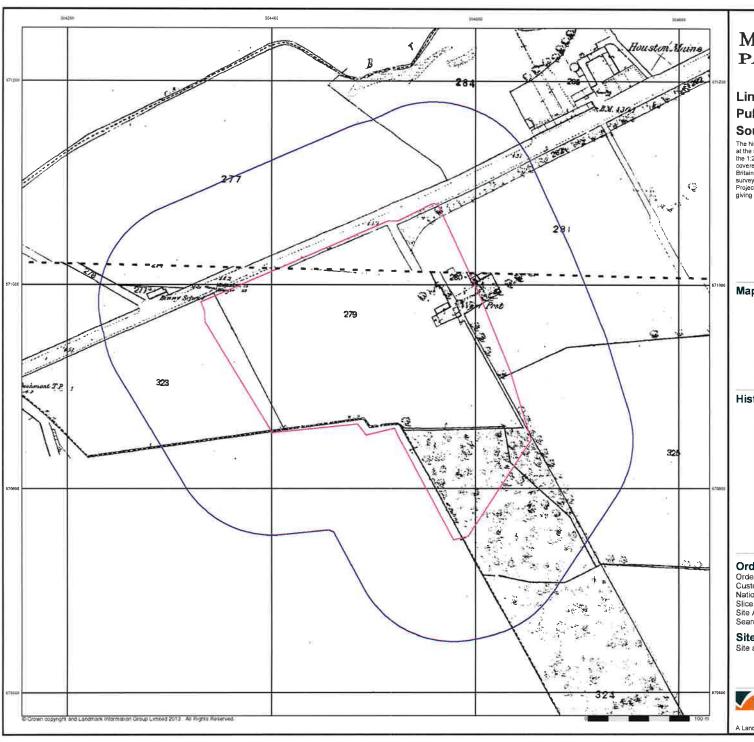
Site at 304460, 670950



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Linlithgowshire Published 1856

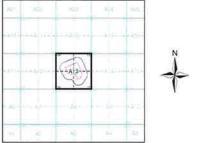
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's, In 1846 it 12.500 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 surveyes 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: 55645951_1_1 Customer Ref: G2014/166 National Grid Reference: 304510, 670920 Slice: A Site Area (Ha): 5.57

Site Area (Ha): 5.57 Search Buffer (m): 100

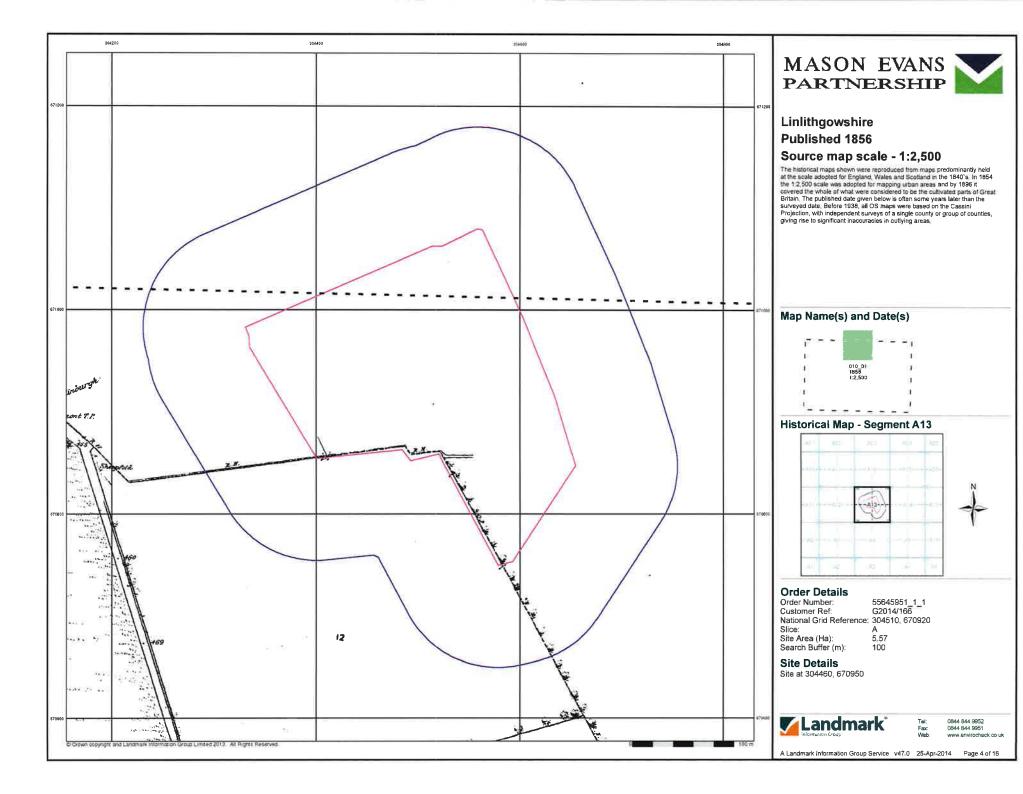
Site Details

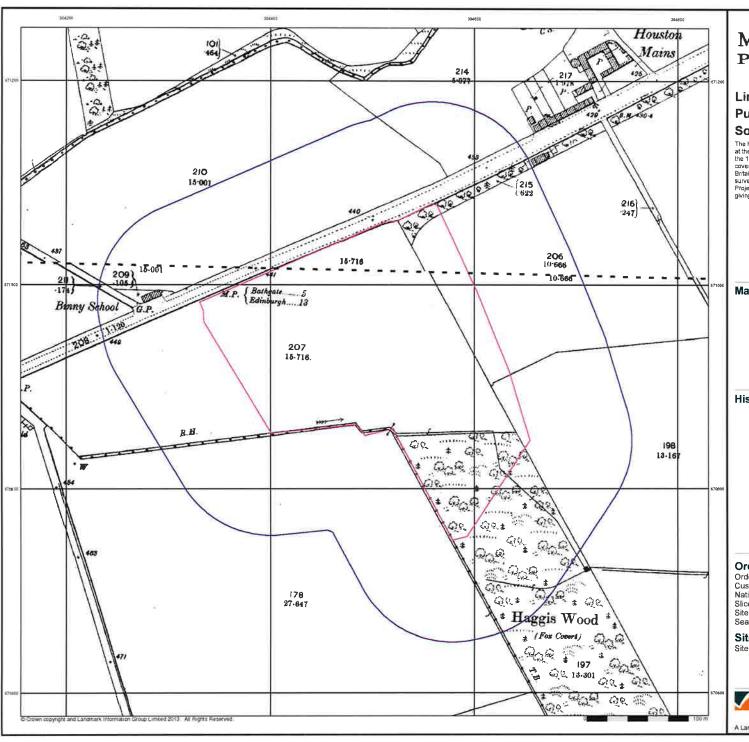
Site at 304460, 670950



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Linlithgowshire Published 1897

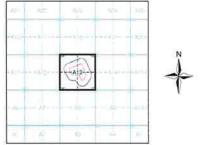
Source map scale - 1:2,500

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 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: 55645951_1_1 G2014/166 Customer Ref: National Grid Reference: 304510, 670920 Slice:

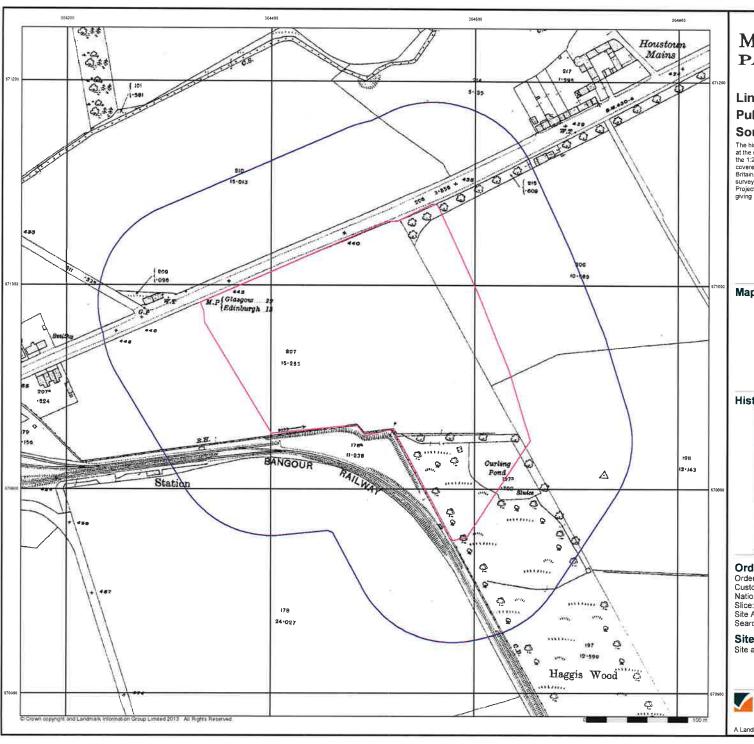
Site Area (Ha): Search Buffer (m):

Site Details Site at 304460, 670950

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Linlithgowshire Published 1915

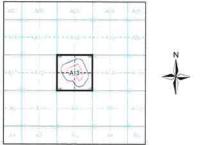
Source map scale - 1:2,500

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: 55645951_1_1 Customer Ref: G2014/166 National Grid Reference: 304510, 670920 Slice: Site Area (Ha): 5.57

Search Buffer (m):

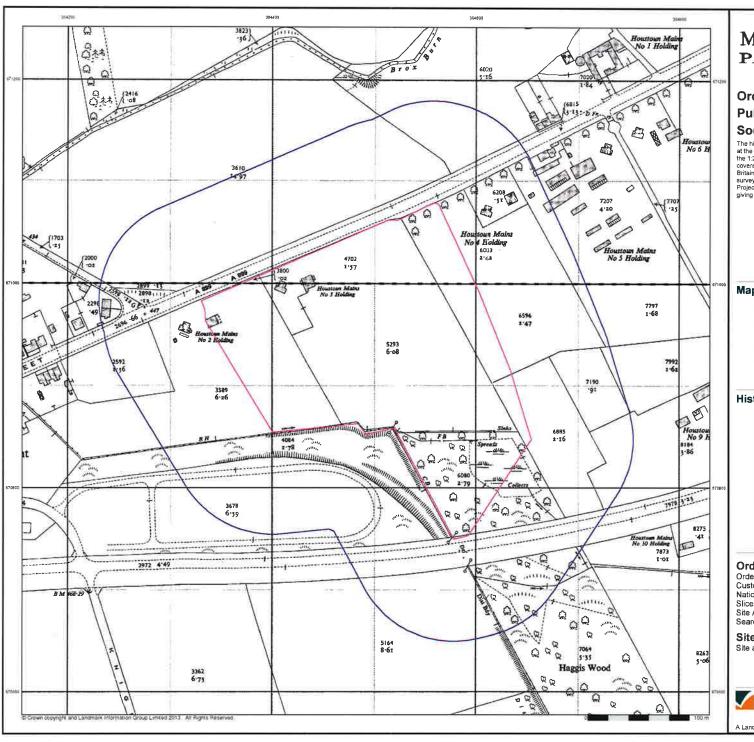
Site Details

Site at 304460, 670950



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Ordnance Survey Plan Published 1955

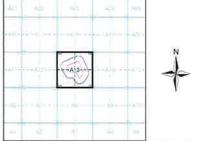
Source map scale - 1:2,500

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 12,500 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 surveyes 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:
 55645951_1_1

 Customer Ref:
 G2014/166

 National Grid Reference:
 304510, 670920

 Slice:
 A

Site Area (Ha): 5.57 Search Buffer (m): 100

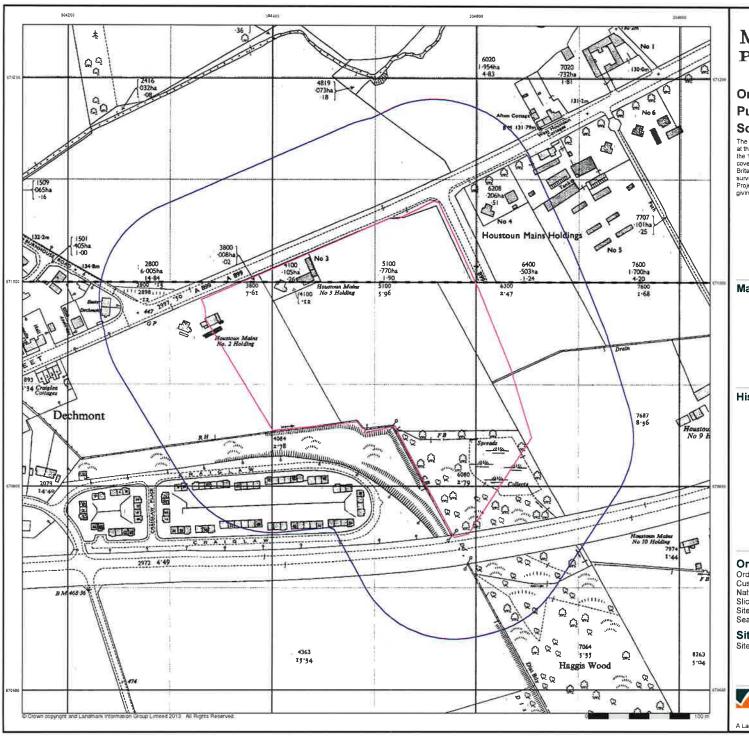
Site Details

Site at 304460, 670950



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Ordnance Survey Plan Published 1961 - 1972

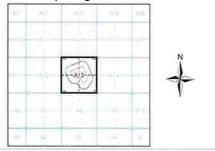
Source map scale - 1:2,500

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

55645951_1_1 Order Number: G2014/166 Customer Ref: National Grid Reference: 304510, 670920 Slice:

Site Area (Ha): 5.57 Search Buffer (m): 100

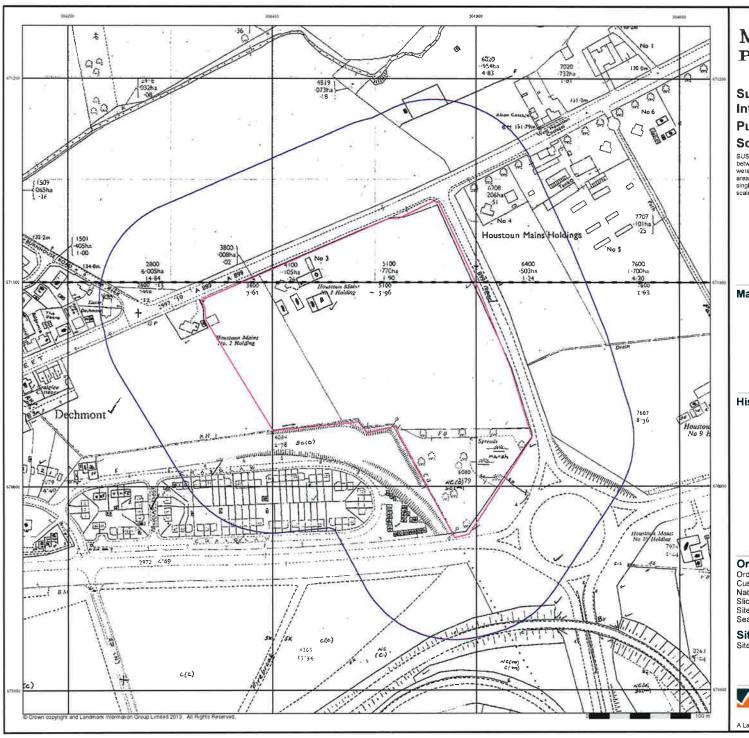
Site Details

Site at 304460, 670950



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Supply of Unpublished Survey Information

Published 1975

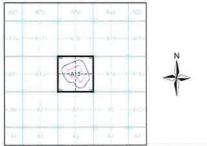
Source map scale - 1:2,500

SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a "work-in-progress" plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

1		
i	NT0471 1975	1
í.	12,500	ı
į.		1
~	-	_
i	NT0470	1
ï	12,500	1
í.		1

Historical Map - Segment A13



Order Details

Order Number: 55645951_1_1
Customer Ref: G2014/166
National Grid Reference: 304510, 670920
Slice: A

Site Area (Ha): 5.57 Search Buffer (m): 100

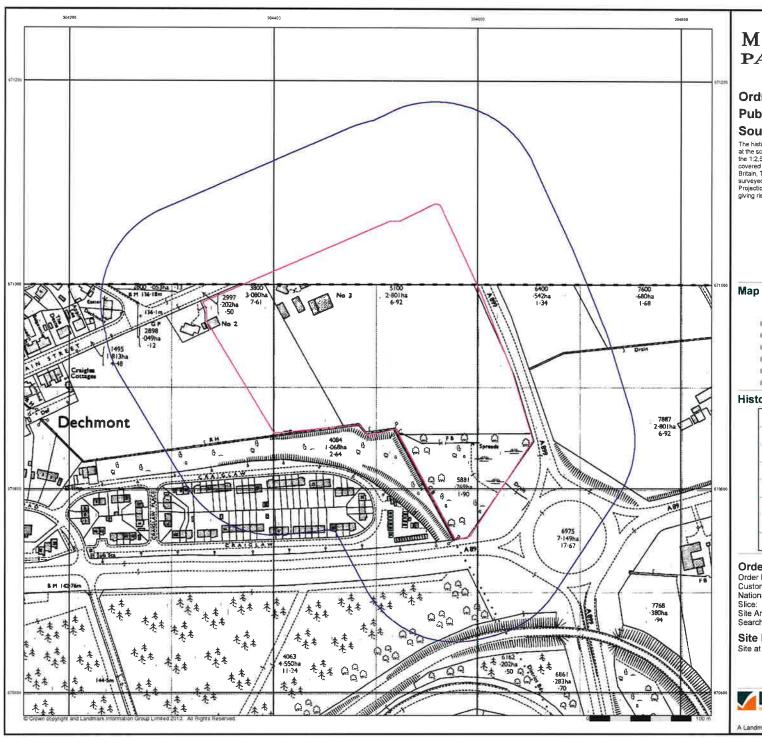
Site Details

Site at 304460, 670950



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Ordnance Survey Plan Published 1976

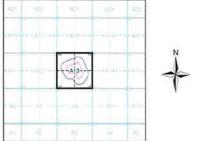
Source map scale - 1:2,500

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 112,500 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 surveye of a sligie 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: 55645951_1_1
Customer Ref: G2014/166
National Grid Reference: 304510, 670920
Slice: A
Site Area (Ha): 5.57

Site Area (Ha): 5.55 Search Buffer (m): 100

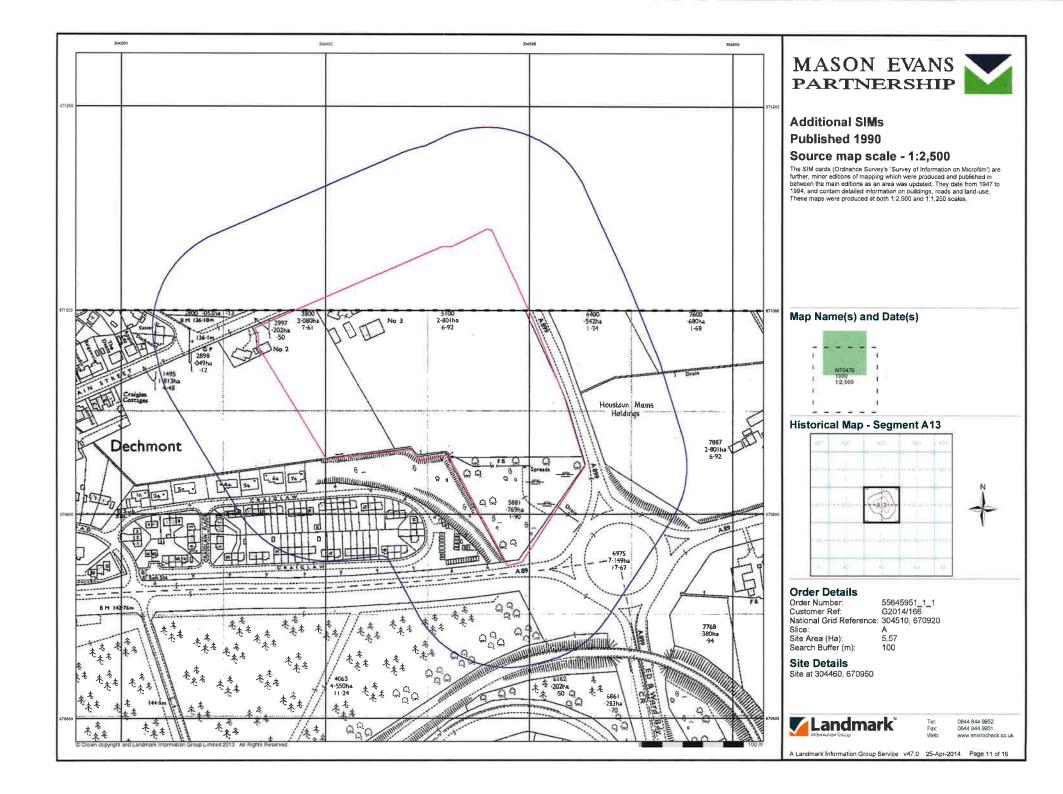
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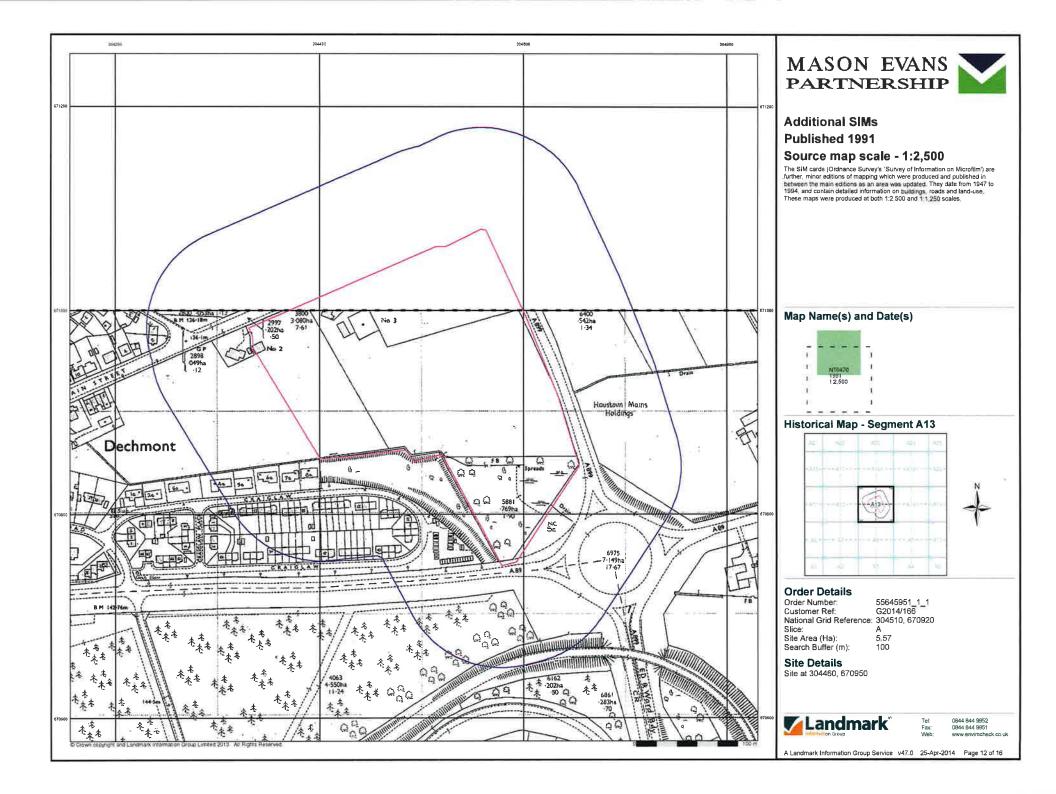
Site at 304460, 670950

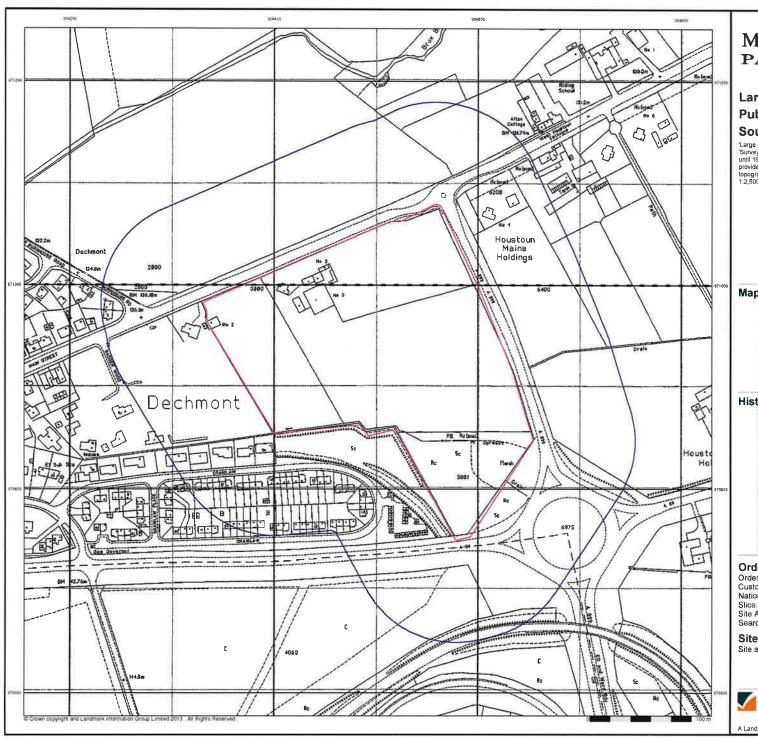


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Large-Scale National Grid Data Published 1992

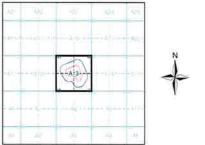
Source map scale - 1:2,500

'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: 55645951_1_1 G2014/166 Customer Ref: National Grid Reference: 304510, 670920 Site Area (Ha): 5.57

Search Buffer (m):

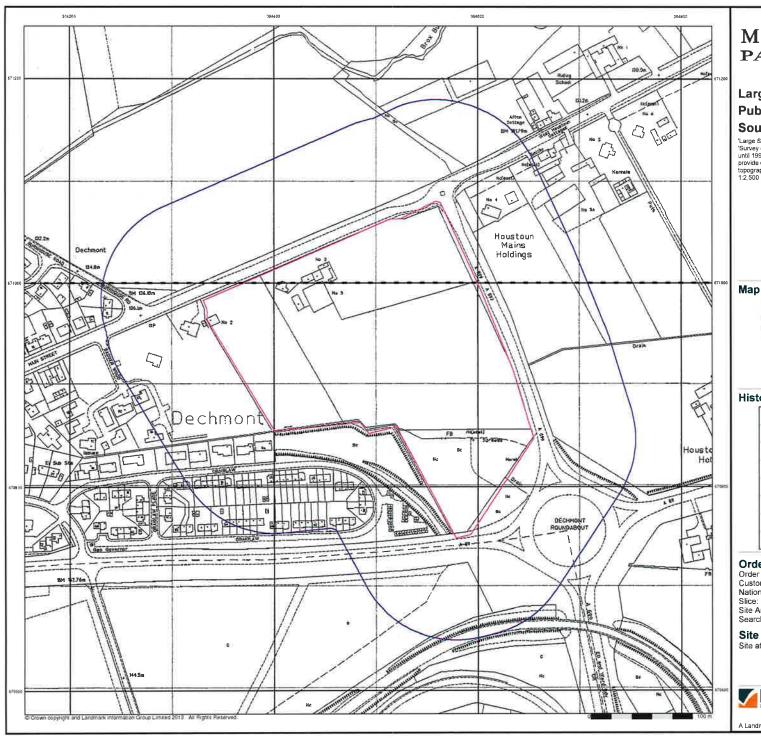
Site Details

Site at 304460, 670950



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Large-Scale National Grid Data Published 1995

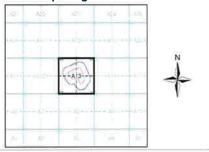
Source map scale - 1:2,500

'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-unners 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 12,500 and 11,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

 Order Number:
 55645951_1_1

 Customer Ref:
 G2014/166

 National Grid Reference:
 304510, 670920

 Slice:
 A

Site Area (Ha): 5,57 Search Buffer (m): 100

Site Details

Site at 304460, 670950



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Large-Scale National Grid Data Published 1996

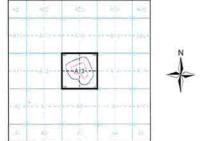
Source map scale - 1:2,500

'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 12,500 and 11,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

 Order Number:
 55645951_1_1

 Customer Ref:
 G2014/166

 National Grid Reference:
 304510, 670920

 Slice:
 A

Site Area (Ha): 5.57 Search Buffer (m): 100

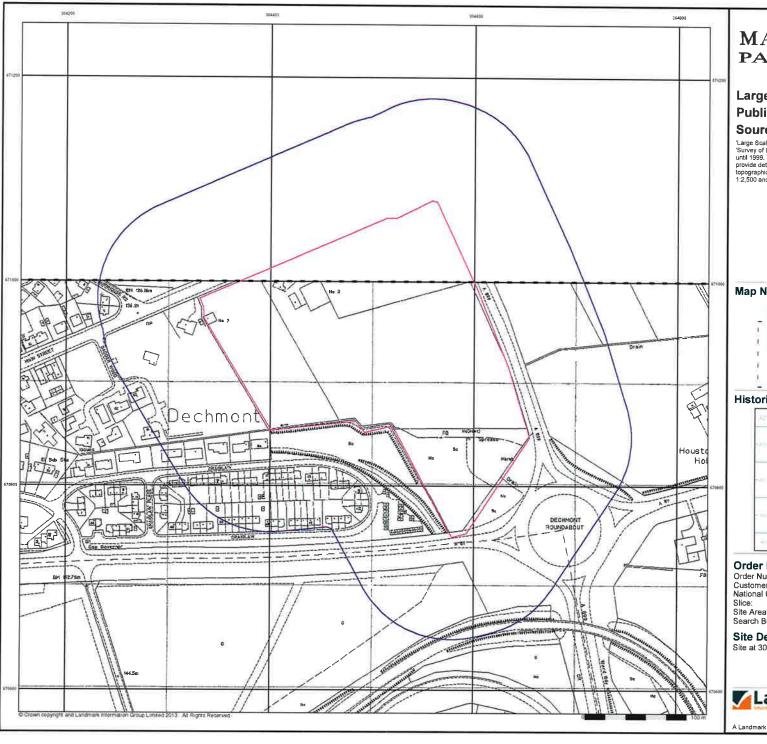
Site Details

Site at 304460, 670950



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Large-Scale National Grid Data Published 1996

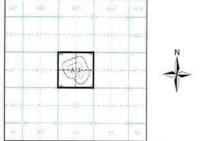
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 55645951_1_1 G2014/166 Customer Ref: National Grid Reference: 304510, 670920

5.57 Site Area (Ha): Search Buffer (m):

Site Details

Site at 304460, 670950



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