

HHBM12-001

# HOPETOUN HOUSE BIOMASS

*Archaeological Monitoring  
for Hopetoun Renewables Ltd*

*0169/FUL/12*

*March 2013*

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Project Manager: Edward Bailey  
Author: Donald Wilson  
Fieldwork: Kirsty Dingwall, Jurgen van Wessel, Donald Wilson  
Graphics: Anna Sztromwasser  
  
Approved by: Edward Bailey – Project Manager

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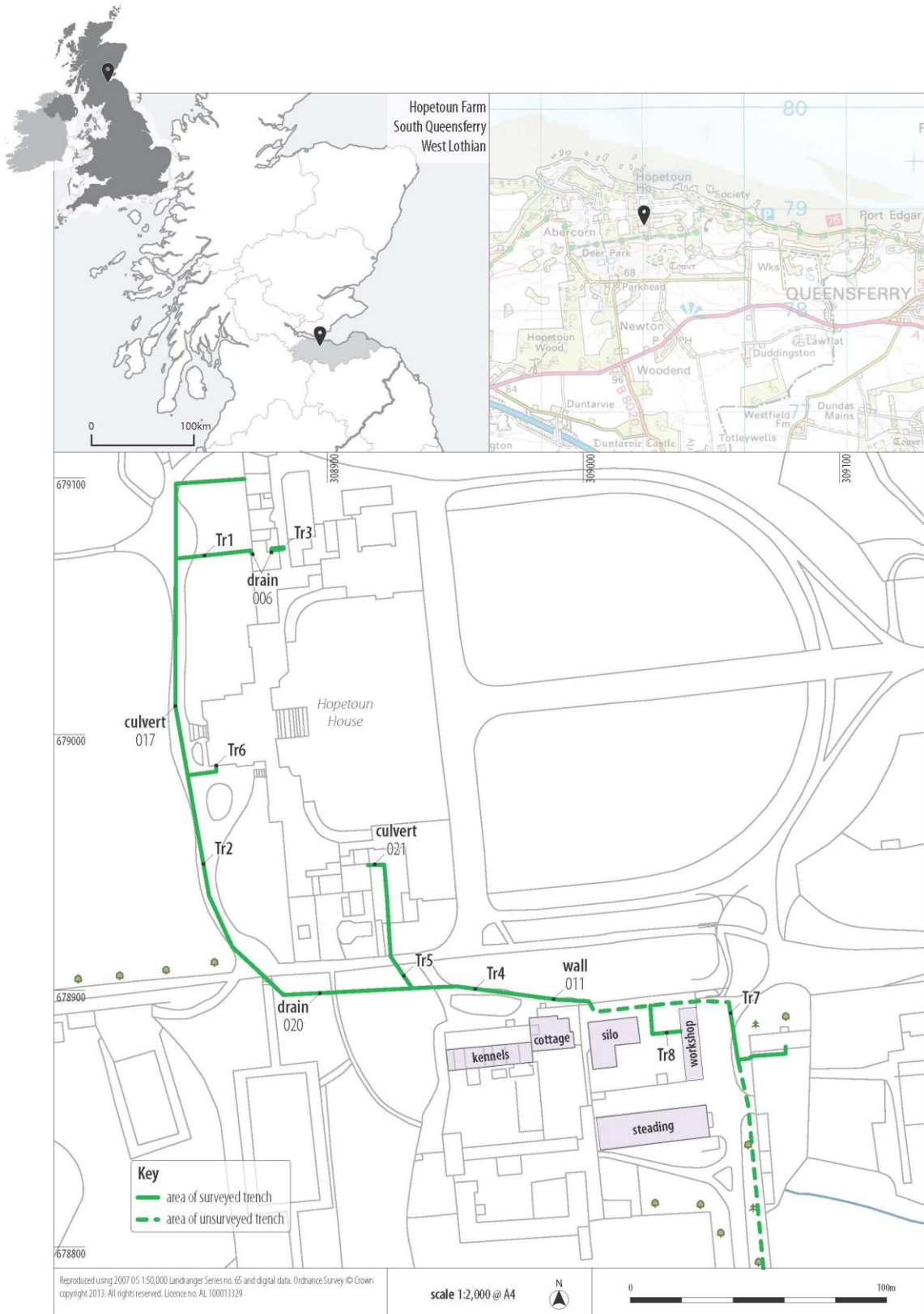
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# HOPETOUN HOUSE BIOMASS

## Archaeological Monitoring

### *Summary*

A programme of archaeological work was carried out in order to satisfy a condition of planning consent for the construction of a biomass heating plant at Hopetoun House, Abercorn, West Lothian. The programme comprised the archaeological monitoring of ground works associated with the laying of the conductor pipes across the gardens to the south and west of Hopetoun House. The work involved the excavation of a number of inter-connected trenches, all 0.8m wide and 1.2m deep totalling approximately 800m in length. These trenches revealed a number of stone-lined and brick culverts thought to be associated with the nearby Hopetoun House.



Illus 1  
Site location

## 1 INTRODUCTION

Headland Archaeology (UK) Ltd was commissioned to carry out a programme of archaeological monitoring during the construction of a biomass heating plant and associated infrastructure at Hopetoun House, Abercorn, West Lothian. The work was carried out in order to satisfy a condition of planning consent (ref: 0169/FUL/12) and adhered to a Written Scheme of Investigation prepared by Headland Archaeology and agreed with West of Scotland Archaeology Service (WoSAS) on behalf of the West Lothian Council (the Local Planning Authority).

This report presents the results of the archaeological monitoring, which incorporated approximately 800 m of pipe trenching. The fieldwork was undertaken between 12<sup>th</sup> November 2012 and 26<sup>th</sup> February 2013 in mixed weather conditions.

## 2 SITE LOCATION AND DESCRIPTION

The trenches were excavated between NGR: NT 08837 79076 and NT 08989 78884 located to the south and west of the complex of buildings that form Hopetoun House, and farm buildings located to the south of the main house (*Illus 1*).

The site lies around 37 m OD and is underlain by superficial deposits of silt and clay, which are Devensian in origin. (British Geological Survey website; <http://www.bgs.ac.uk>).

Hopetoun House Estate (NMRS: NT07NE 13; SMR 18042) was built between 1699 and 1701 and is the traditional home of the Earl of Hopetoun. Adair's manuscript of 1684 indicates the existence of an earlier building or settlement in the region of Hopetoun House. The remains of Stanleyhill Tower (NMRS: NT07NE 11; SMR 18040), a 17<sup>th</sup> century mansion, also lies to the south of the house. This indicated a moderate potential for post-medieval remains that predated Hopetoun House being present below ground in the region of the development.

Within the greater area a cropmark of potential prehistoric date lies to the south of the site at Newton Mains and early published accounts

suggest that a Roman Camp or watchtower may have been present to the east of the workshops. To the north-west of Hopetoun House lies Abercorn Kirk which has its origins during the early Christian period. These indicated that there was some potential for below ground remains dating to these periods being present.

To the south of the Hopetoun House lies a complex of farm buildings that date from 1725 that also indicated the potential for buried archaeological remains dating to this period to be present. Both the workshop (NMRS: NT07NE 13.5) and the steading (NMRS: NT07NE 36) to the south are listed buildings (HS 614).

The first detailed cartographic evidence of the house is Roy's military map of 1750 which depicts both the main house and a series of farm buildings to the south, although the map is not detailed enough to clearly define these buildings. It was not until the 1854 1<sup>st</sup> edition ordnance survey map that a definitive plan of the farm buildings is clearly depicted.

## 3 AIMS & OBJECTIVES

The watching brief was designed to mitigate any adverse impacts on sub-surface remains of archaeological interest.

The resulting archive will be organised and deposited in the NMRS; to facilitate access for future research and interpretation for public benefit. Reports will be made available through the forums noted below.

## 4 METHODOLOGY

### 4.1 Site works

The main contractor undertook all ground breaking works. A toothed bucket was used to remove any hard surfaces/demolition deposits and all soft deposits were removed using a flat bladed ditching bucket. The majority of ground breaking works were monitored by an archaeologist. The monitoring strategy was put in place to provide information on any previously unrecorded features of

archaeological interest in a relatively unobtrusive manner. It did not involve major interruption to the work programme. Isolated features or artefacts were recorded according to normal watching brief methodology.

## 4.2 Recording

All recording followed IfA Standards and Guidance for conducting archaeological watching briefs (2008). All contexts were given unique numbers. A full list of these can be found in Appendix 1 at the end of this report. All recording was undertaken on *pro forma* record cards. 35mm colour transparencies have been taken with a graduated metric scale clearly visible. Digital images have also been taken for illustrative purposes. A full photographic record can be found in Appendix 1.

## 5 RESULTS

The programme of archaeological works comprised the monitoring of the majority of ground works associated with the laying of heating conductor pipes across the grounds of Hopetoun House. This work required the excavation of a series of inter-connected trenches 0.8m wide and 1.2m deep. A total of eight trenches (Trench 1 to 8) were monitored as part of this work and these varied in length from a few metres to over 200m (Illus 1).



Illus 2: View of Trench 2 to the rear of Hopetoun House, facing north

The trenches ran from the north wing of the main house (the location of the existing boiler house) across the lawn to the rear (west) of the

house before continuing south along the gravel track to the rear of the house (Illus 2). As the trench reached the south end of the track it turned to the east running through the tree-lined gardens up to the buildings that form the farm complex, to the south-east of Hopetoun House. Immediately beyond the cottage that forms part of the farm the trench drops in level to the lower ground of the Silo, workshop and steading. The pipe trench ran to the north side of these buildings before turning to the south continuing along the line of the road leading to Byre loan cottage at the Hopetoun estate's south entrance. A number of smaller pipe trenches led off from the main line leading to the various occupied buildings on the estate.

The initial trench (Trench 1) was aligned east/west running from the rear wall of the north wing of Hopetoun House across the lawn to the gravel road where it joined trench 2 (Illus 3).

The stratigraphy of this trench revealed up to 1m of topsoil over the geological subsoil. In this instance the topsoil comprised dark brown stoney sand and the subsoil was mid orange brown gravel. At the east end of the trench a stone-lined drainage feature (006) was encountered abutting the main rear wall of the north wing. This comprised a rectangular rubble stone constructed feature capped with squared worked stone. The drain



### Illus 3: View of Trench 1 from the west

was 1.3m wide and 1m deep projecting 0.4m from the wall face. At the base of the drain a channel ran through the wall leading to a short length of culvert on the east side of the wall (this was exposed in Trench 3).

Trench 2 located to the north of Trench 1 ran from the west side of the north wing continuing across the lawn up to the gravel road gradually turning to the south and continuing along the line of the road (Illus 4). A slightly larger area was excavated where this trench linked up to Trench 1 for the insertion of a pipe joint. The stratigraphy of this trench was compatible with the results of Trench 1 with a 1m deep layer of topsoil overlying the geological subsoil.



Illus 4: View of Trench2 facing north

As Trench 2 reached the steps leading up to the rear entrance of the main house a stone-lined culvert (017) (Illus 5) aligned north-west/south-east was recorded 0.9m below the surface. The culvert had large stone caps covering a 0.2m wide stone-lined channel that cut into the geological subsoil.

To the east side of the north wing wall a short trench (Trench 3) was excavated leading to the existing boiler house. This exposed a short length of stone constructed culvert (006) running below the main wing wall suggesting

it was contemporary with the construction of the wing in the 19<sup>th</sup> century.



Illus 5: View of culvert (017) from the west

Trench 4 ran from the north side of a cottage situated close to the kennels located to the south-east of the main house. The area to the front of the cottage was lightly wooded with a narrow gravel track leading to the cottage. A tall rubble stone wall ran eastwards from the east side of the building dividing the cottage from the farm buildings to the south. The ground level to the south side of this wall was 2m lower than that of the wooded area to the north. A series of stone steps attached to the east side of the cottage led to this lower area.

The trench ran north from a wall immediately east of the cottage turning sharply to the west across the front of the building. The ground to the east side of the cottage rose steeply resulting in the west facing trench section of Trench 4 being over 2m high exposing over 0.5m of topsoil (007) overlying 1.2m of made ground (008) (Illus 6).



Illus 6: View of the W facing section at the E end of Trench 4.



Within this layer were shallow lenses of lime mortar and small stones (009) suggesting this was re-deposited material. Below the made ground (008) a shallow layer of loose shale fragments (010) up to 0.1m thick was recorded. This material was only identified in the initial 5 m of the trench and was only seen in section.

One of the most significant features recorded at east end of Trench 4 was a large amount of rubble stone (011) that may have formed part of a wall foundation (Illus 7).



Illus 7: View of foundation wall (011) from the south

Unfortunately this feature was predominantly exposed below a series of modern services so was difficult to record and interpret. The stones were bonded with a course of white lime mortar but very little structure was visible. The stones were mainly recorded in the south facing section of the trench forming a feature 2.8m wide and 0.5m tall, although the base of these stones was not exposed. The cut for these stones (012) cut through a layer of sandy garden soil (013) up to 0.6m thick recorded above the geological subsoil. The layer of shale (010) was particularly predominant above this stone feature and may represent a demolition phase.

Beyond the initial 10m of Trench 4 at the east end the garden soil became increasing shallow until the stratigraphy of the trench to the west side of the cottage comprised 0.3m of topsoil (007) over the geological subsoil (014). The trench continued west through a lightly wooded garden to the south of the access track leading to the rear of the house. Close to the

west end of the trench a small brick-lined drain (020) was recorded 0.7m below the surface cutting through geological subsoil (Illus 8). The drain was 0.5m wide and 0.6m high with a brick arched cover and brick base.



Illus 8: Detail of the brick-lined drain in Trench 4

As Trench 4 reached beyond the rear of Hopetoun House it turned to the north linking up with the south end of Trench 2.

Trench 5 ran from a boiler house located on the south wing of the main house continuing south to link up with Trench 4. At the north end of the trench, as it abutted the east wall of the boiler house, the outer wall of a brick-lined culvert (021) was exposed in the south facing section (Illus 9). The culvert was capped with stone slabs.



Illus 9: View of south facing section at the north end of Trench 5 showing culvert 021.

The trench continued to the south exposing 0.35m of topsoil overlying gravel rich orange sand geological subsoil. As the trench reached the gravel access track to the south side of the house a number of poorly sorted large stones were encountered that probably formed a demolition layer from an earlier boundary wall to the south wing of the house. The stones were 0.8m below the surface within a mixed garden soil deposit.

A very short trench (Trench 6; Illus 10) was monitored to the south of the rear entrance to Hopetoun House. This exposed a number of service pipes backfilled with sand.



Illus 10: East facing section of Trench 6

The final two trenches (Trench 7 and Trench 8) were located close to the workshop building that formed part of the farm complex. These two short trenches exposed clean yellow sand below the shallow topsoil.

The conductor pipe trench was also continued to the south of the workshop but this was not monitored. Previous monitoring (Wilson 2013) of service pipes associated with the re-development of the workshop had recorded that the made ground deposits below the road surface were over 2m deep. As the conductor pipes were being laid at a maximum depth of 1.2m the excavations would not have exceeded the limit of the made ground.

## 5.1 Discussion

The monitoring as a whole revealed relatively few archaeological features. The few features that were identified during the monitoring works, such as the culvert and drain probably relate to the

construction and later modifications to Hopetoun House and are linked to the designed garden and site drainage.

The only enigmatic feature was the stone wall foundations recorded in Trench 4 to the north of the cottage. Unfortunately no dating evidence was recovered from this feature and its location below a number of service pipes made its identification difficult. The stone was only recorded in the south facing section of the trench suggesting whatever the stones represented they may survive in-situ to the north of the trench location.

## 6 REFERENCES

### 6.1 Bibliographic sources

Archaeological Archives Forum  
Archaeological Archives: a guide to best practice in creation, compilation, transfer and curation (published by the IfA 2007).

IfA Standards and Guidance for archaeological watching briefs (revised October 2008).

SPP: Scottish Planning Policy (February 2010);  
<http://www.scotland.gov.uk/Publication/s/2010/02/03132605/0>

Wilson, D 2013 *Hopetoun Home Farm, South Queensferry: Results of Historic Building Recording and Watching Brief*. An Unpublished Data Structure Report for Headland Archaeology (HHFQ12)

### 6.2 Cartographic sources

1684 John Adair manuscript map of Midlothian

1745 Roys military map of Scotland

1854 Ordnance Survey six-inch Linlithgowshire sheet 2

## 6.3 Other sources

### *Internet*

British Geological Society

<http://mapapps.bgs.ac.uk/geologyofbritain/home.html?location=dunbar> accessed Oct 2012

National Map Library of Scotland website

<http://maps.nls.uk/> accessed Oct 2012

## 7 APPENDICES

### 7.1 Appendix 1 – Site registers

#### *Photographic register*

Frame no.	Digital No	C/S no.	Direction	Description
1	HHBM-01			General pre-excavation site shots
2	HHBM-02			General pre-excavation site shots
3	HHBM-03			General pre-excavation site shots
4	HHBM-04			General pre-excavation site shots
5	HHBM-05			General pre-excavation site shots
6	HHBM-06			General pre-excavation site shots
7	HHBM-07			General pre-excavation site shots
8	HHBM-08			General pre-excavation site shots
9	HHBM-09			General pre-excavation site shots
10	HHBM-10			General pre-excavation site shots
11	HHBM-11			General pre-excavation site shots
12	HHBM-12			General pre-excavation site shots
13	HHBM-13			General pre-excavation site shots
14	HHBM-14			General pre-excavation site shots
15	HHBM-15			General pre-excavation site shots
16	HHBM-16			General pre-excavation site shots
17	HHBM-17			General pre-excavation site shots
18	HHBM-18			General pre-excavation site shots
19	HHBM-19			General pre-excavation site shots
20	HHBM-20			General pre-excavation site shots
21	HHBM-21			General pre-excavation site shots
22	HHBM-22			General pre-excavation site shots
23	HHBM-23	1/36	NW	Stone Feature (001) in-situ
24	HHBM-24	1/35	N	Foundation (002)
25	HHBM-25	1/34	W	Foundation (002)
26		1/33	N	Foundation (002) under demolition
27		1/32	S	View of W foundation trench under excavation
28	HHBM-26	1/31	E	Wall (002)
29	HHBM-27	1/30	E	Wall (002)
30	HHBM-28	1/29	N	Sample section B
31	HHBM-29		E	Removal of feature (002)
32	HHBM-30		E	Removal of feature (002)
33	HHBM-31			Detail of brick type
34	HHBM-32			Detail of brick type

Frame no.	Digital No	C/S no.	Direction	Description
35	HHBM-33	1/28	E	Section of E track
36		1/27	SE	General shot of E end of trench 1
37		1/26	E	View of
38	HHBM-34	1/25	SE	General shot of E end of trench 2
39	HHBM-35	1/24	E	View of foundations in trench 2
40	HHBM-36	1/23	N	Section of trench 4
41	HHBM-37	1/22	W	Continuation of trench 2
42	HHBM-38		W	Continuation of trench 3
43	HHBM-41	1/21	N	Trench 3 - face of side wall of vent
44	HHBM-42	1/20	N	Trench 3 - back wall of vent
45	HHBM-43	1/19	E	Re-aligned trench 1 + W wall of vent
46	HHBM-44	1/18	W	Trench 1 showing vent wall
47	HHBM-45		E	Vent wall
48	HHBM-46		S	Section of trench 1
49	HHBM-47		WNW	Section through trench 2
50	HHBM-48		SW	General shot showing trench 2
51	HHBM-49	1/17	N	Section of trench 1 8m from the E end
52	HHBM-50	1/16		View of the W end of trench 1
53	HHBM-51	1/15		View of the W end of trench 1
54	HHBM-52		E	Detail of feature 006
55	HHBM-53	1/14	S	N facing section in Tr3
56	HHBM-54		N	S facing section in Tr4
57	HHBM-55	1/13		General site shot
58	HHBM-56			Joint linking trench 1 and 2
59	HHBM-57	1/12		Joint linking trench 1 and 2
60	HHBM-58	1/11	E	View of trench 1 excavations in the courtyard
61	HHBM-59		W	View of trench 1 excavations in the courtyard
62	HHBM-60	1/10	E	East end of trench 4
63	HHBM-61		E	East end of trench 4 showing the W facing section
64	HHBM-62		SE	East end of trench 4 showing the W facing section and wall (011)
65	HHBM-63	1/9	NE	East end of trench 4 showing the W facing section and wall (011)
66	HHBM-64	1/8	E	East end of trench 4 showing the W facing section and wall (011)
67	HHBM-65		E	East end of trench 4 showing the W facing section and wall (011)
68	HHBM-66		N	S facing section of trench 4 at the E end showing wall (011)
69	HHBM-67	1/7	N	S facing section of trench 4 at the E end showing wall (011)

Frame no.	Digital No	C/S no.	Direction	Description
70	HHBM-68		NE	S facing section of trench 4 at the E end showing wall (011)
71	HHBM-69		NE	S facing section of trench 4 at the E end showing wall (011)
72	HHBM-70		NW	S facing section of trench 4 at the E end showing wall (011)
73	HHBM-71	1/6	NW	S facing section of trench 4 at the E end showing wall (011)
74	HHBM-72	1/5	NE	NE corner of trench 4
75	HHBM-73	1/4	N	W part of stone foundation (011)
76	HHBM-74	1/3	N	E part of stone foundation (011)
77	HHBM-75	1/2	N	E part of stone foundation (011)
78	HHBM-76	2/36	N	S facing section of trench 4 10m from the E end
79	HHBM-77	2/35	E	View of trench 4 in front of the cottage
80	HHBM-78	2/34	E	View of trench 4 in front of the cottage
81	HHBM-79			Film 2 ID shot
82	HHBM-80	2/33	S	N facing section at the E end of trench 4
83	HHBM-81		SE	N facing section at the E end of trench 4
84	HHBM-82	2/32	E	East end of trench 4
85	HHBM-83	2/31	SE	Trench 4 - 20m from the E end
86	HHBM-84	2/30	SE	Trench 4 - 20m from the E end
87	HHBM-85	2/29	E	Trench 4 - 30m from the E end
88	HHBM-86	2/28	N	Location of the N end of trench 5
89	HHBM-87	2/27	N	North end of trench 5
90	HHBM-88	2/26	NW	North end of trench 5 showing culvert 021
91	HHBM-89		N	North end of trench 5 showing culvert 021
92	HHBM-90	2/25	S	View of the N half of trench 5
93	HHBM-91	2/24	S	View of the N half of trench 5
94	HHBM-92	2/23	N	Trench 5 across the forecourt area
95	HHBM-93	2/22	N	Trench 5 across the forecourt area
96	HHBM-94	2/21	E	W facing section of trench 5 across the forecourt
97	HHBM-95	2/20	E	W facing section of trench 5 across the road
98	HHBM-96	2/19	N	Trench 5 as it crosses the road
99	HHBM-97	2/18	SE	Trench 5 at the south end within the garden
100	HHBM-98	2/17	N	Trench 5 at the south end
101	HHBM-99	2/16	N	Trench 5 at the south end
102	HHBM-100	2/15	S	View of the continuation of trench 2
103	HHBM-101	2/14	W	E facing section of trench 2
104	HHBM-102	2/13	SW	General view of trench 2 excavations
105	HHBM-103	2/12	N	General view of trench 2 excavations

Frame no.	Digital No	C/S no.	Direction	Description
106	HHBM-104		N	General view of trench 2 excavations
107	HHBM-105	2/11	W	View of the stone-lined drain (017)
108	HHBM-106		N	View of the stone-lined drain (017)
109	HHBM-107	2/10	E	View of the stone-lined drain (017) showing the section
110	HHBM-108	2/9	S	Trench 2 showing the location of the drain (017)
111	HHBM-109	2/8	S	Trench 2 showing the location of the drain (017)
112	HHBM-110		S	General shot of trench 2 excavations
113	HHBM-111	2/7	NE	General shot of trench 2 excavations
114	HHBM-112	2/6	W	View of the topsoil strip for the western half of trench 4
115	HHBM-113	2/5	SE	View of the topsoil strip for the western half of trench 4
116	HHBM-114	2/4	E	Location of the topsoil strip of trench 4
117	HHBM-115	2/3	S	South half of trench 2
118	HHBM-116		W	E facing section of trench 2 in the southern half
119	HHBM-117	2/2	N	View of trench 2 from the south of the house
120	HHBM-118	2/1	N	South facing section of trench 4 showing culvert (020)
121	HHBM-119		N	South facing section of trench 4 showing culvert (020)
122	HHBM-120		N	South facing section of trench 4 showing culvert (020)
123	HHBM-121		E	View of trench 4 from the east end
124	HHBM-122		N	View of trench 2 from the south end
125	HHBM-123		W	View of trench 4 towards the east end
126	HHBM-124		N	S end of Trench 2 close to the joint with Trench 4
127	HHBM-125		E	View of Trench 6 against the main wall of the house
128	HHBM-126		N	View of Trench 6 excavations
129	HHBM-127		N	End of trench 6
130	HHBM-128		W	E facing section of trench 6
131	HHBM-129		W	Cable trench through trench 8 E of wall
132	HHBM-130		E	Cable trench through trench 8 W of wall
133	HHBM-131		S	Backfilled trenches nor monitored
134	HHBM-132		S	Pipes in Trench 7
135	HHBM-133		NE	Pipes in Trench 8
136	HHBM-134		N	S facing section of Trench 7

*Context register*

<b>Context no.</b>	<b>Area</b>	<b>Description</b>
001	Silo	A large sandstone block located in the NW corner of the silo and includes a 0.15m wide drainage channel through the middle
002	Silo	The foundations to a brick wall for an out-house to the silo with a concrete plinth underlying brick coursing. The bricks were stamped 'Muir Armadale' and were bonded with cement. Remains of a 19 <sup>th</sup> /20 <sup>th</sup> century extension
003	Silo	A layer of mid-dark brown clayey silt with heavy bioturbation. A 0.3m deep layer of garden soil.
004	Silo	A deposit of charcoal and coal fragments containing moderate debris.
005	Silo	A light brown clayey silt with occasional gravel inclusions forming an interface between the garden soil and the natural
006	TR.1	A stone drainage channel 1.05m wide and 1.5m deep running below the main wall of the north wing of Hopetoun House. This was visible on both side of the wall. .
007	TR.4	A layer of topsoil 0.3m deep comprising a dark brown fine sand with occasional small stone inclusions. Recorded to the north of the cottage overlying (008).
008	TR.4	A soft mid-orange brown fine sand with moderate stone inclusions. A layer of re-deposited material below (007) and over (010) and was 1m deep
009	TR.4	Lenses of lime mortar and stone within layer (009). Re-deposited material imported with material (009)
010	TR.4	A thin layer of loose friable shale fragments up to 0.1m thick below layer (008) and only recorded in the final 7m of Tr 4 at the E end. The layer sits above (011) and (013).
011	TR.4	A deposit of large stones in a lime mortar bond forming the foundation to a wall. The stones were roughly 0.25m <sup>2</sup> . The stones were recorded in the S facing section of Tr 4 north of the cottage forming a wall 2.8m long and 0.6m high. No real structure could be identified but was below alayer of shale (010).. This may represent the corner of a building or wall.
012	TR.4	Construction cut for stone structure (011). It cuts both (013) and the natural gravel (014). The base was not exposed.
013	TR.4	A layer of compact qrange brown fine sand with occasional small stone inclusions and small charcoal flecks. Only recorded at the E end of trench 4 possibly forming an old ground surface.
014	TR.4	A compact friable orange brown gravel forming the natural subsoil
015	TR.2	A linear NW-SE aligned cut with vertical sides and a flat base. Forms the cut for culvert (017). 1.1m deep and 1.1m wide cutting the re-deposited stone rich sand recorded across the area of Tr.2 and the underlying natural sand. Backfilled with (016).
016	TR.2	A fill of light yellowish brown stone rich sand forming the backfill to cut (015).
017	TR.2	A stone lined drain/culvert aligned NW-SE though Tr 2 close to the steps to the rear entrance of Hopetoun House. Constructed of large square capstones and thick stone sides bonded with lime mortar 0.42m wide forming a drainage channel 0.22m wide and 0.2m high. The drain was 0.9m below the surface.
018	TR.4	A layer of soft greyish silty sand forming a layer of re-deposited material across the garden area to the rear of Hopetoun House. The layer was up to 0.8m deep overlying the yellow sand geological subsoil. Recorded at the W end of Tr.4.



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<b>Context no.</b>	<b>Area</b>	<b>Description</b>
019	TR.4	A 0.65m wide linear cut aligned N-S through layer (018) for brick drain (020). The cut is 1m deep cutting the natural below. The base of the cut was not visible in section.
020	TR.4	A brick-lined drain made of handmade red bricks bonded with a course lime mortar. The drain had a brick base and arched cover forming a drain 0.5m wide and 0.6m tall. The walls were 0.11m thick..
021	TR5	A large brick-lined culvert exposed in the S facing section of Tr.5. The culvert was aligned E-W and was constructed of hand made brick capped with stone slabs. The culvert was 0.8m tall. The width was not exposed and only the initial 1.5 m length leading into the boiler house were exposed.

## 7.2 Appendix 2 – Discovery and Excavation in Scotland entry

<b>LOCAL AUTHORITY:</b>	West Lothian Council
<b>PROJECT TITLE/SITE NAME:</b>	Hopetoun House Biomass
<b>PROJECT CODE:</b>	HHBM12
<b>PARISH:</b>	Abercorn
<b>NAME OF CONTRIBUTOR:</b>	Donald Wilson
<b>NAME OF ORGANISATION:</b>	Headland Archaeology
<b>TYPE(S) OF PROJECT:</b>	Watching Brief
<b>NMRS NO(S):</b>	NT07NE 13
<b>SITE/MONUMENT TYPE(S):</b>	Hopetoun House
<b>SIGNIFICANT FINDS:</b>	None
<b>NGR (2 letters, 8 or 10 figures)</b>	N
<b>START DATE (this season)</b>	12 <sup>th</sup> November 2012
<b>END DATE (this season)</b>	26 <sup>th</sup> February 2013
<b>PREVIOUS WORK (incl. DES ref.)</b>	none
<b>MAIN (NARRATIVE) DESCRIPTION: (May include information from other fields)</b>	A programme of archaeological monitoring was carried out in order to satisfy a condition of the planning consent for the construction of a biomass heating plant at Hopetoun House, Abercorn, West Lothian. The programme of works comprised the monitoring all ground works associated with the laying of the conductor pipes across the gardens to the west and south of Hopetoun House. The work including the excavation of a number of inter-connection trenches 0.8m wide and 1.2m deep totalling over 1000m in length . These trenches revealed a number of stone-lined and brick culverts that were probably associated with the construction phase of Hopetoun House in the early 18 <sup>th</sup> century.
<b>PROPOSED FUTURE WORK:</b>	None
<b>CAPTION(S) FOR ILLUSTRS:</b>	
<b>SPONSOR OR FUNDING BODY:</b>	Hopetoun Renewables Ltd
<b>ADDRESS OF MAIN CONTRIBUTOR:</b>	13 Jane Street, Edinburgh EH6 5HE
<b>EMAIL ADDRESS:</b>	don.wilson@headlandarchaeology.com
<b>ARCHIVE LOCATION (intended/deposited)</b>	RCAHMS