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Geophysical Survey

**Durham Gate, Green Lane Industrial Estate,
Spennymoor, County Durham.**

**Evaluation Report,
No. 1825**

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1. NON-TECHNICAL SUMMARY

- 1.1 This report presents the results of a trial trenching evaluation carried out by CFA Archaeology Ltd in September 2010 within Durham Gate development site, part of the Green Lane Industrial Estate, Spennymoor, County Durham. The work was commissioned by WSP Environmental UK on behalf of CAST.
- 1.2 Three trenches were excavated, covering 135m², at the site of a proposed commercial building with associated car parking within the Durham Gate development site.
- 1.3 No features or deposits of archaeological significance were discovered. Made ground to a depth of up to 2.2m was identified, overlying the original ploughsoil within the field. A number of field drains were recorded.

2. INTRODUCTION

2.1 General

- 2.1.1 This report presents the results of an archaeological evaluation undertaken by CFA Archaeology Ltd (CFA) on the 23rd and 24th September 2010 at the site of a proposed commercial building with associated car parking within the Durham Gate development site, part of the Green Lane Industrial Estate, Spennymoor, County Durham (NGR: NZ 2793 3464 centred, Fig. 1). The work was commissioned by WSP Environmental UK on behalf of CAST.
- 2.1.2 A Written Scheme of Investigation (WSI) for the evaluation was produced by WSP Environmental UK on behalf of CAST (Barnes 2010) and agreed in advance with Durham Council Archaeology Section (DCAS).

2.2 Background

- 2.2.1 The portion of the proposed development subject to archaeological evaluation was located between the now disused Black & Decker factory to the west and the A167 to the east (Fig. 1). The area at the time of the evaluation was grassland and was used by Durham Constabulary for the training of police dogs. Surface traces of recent ground investigation boreholes and test-pits were visible.
- 2.2.2 Viewed from the south (Fig. 2), the proposed building will be located on a slight mound, the perimeter of which runs parallel with the industrial estate fence to the east.
- 2.2.3 A desk-based assessment (Lake 2008) covering the Durham Gate development was produced by WSP Environmental UK and this provides a detailed background to the development and history of the site. A geophysical survey (Graham 2008) was also undertaken by Stratascan which showed a large amount of magnetic debris in the evaluation area, probably associated with there being disturbed or made ground on the site.
- 2.2.4 A late Iron Age/Romano-British enclosure complex or small rural settlement (Durham Historic Environment Record (HER) Nos. 9543 and 9565) is located c.380m to the north-west of the development. This was recorded through geophysical survey followed by a later excavation phase. The excavation by West Yorkshire Archaeological Services in 2007 determined that these features formed part of a Late Iron Age/ Romano-British enclosure complex or possible small rural settlement, the presence of Roman pottery suggesting use up to the late second and mid third centuries AD. Other remains in the area are described in the desk-based assessment.
- 2.2.5 The whole development site was agricultural land up until c.1964 when the Black & Decker factory was built. Following the construction of the factory, the evaluation site continued in use as agricultural land.
- 2.2.6 No invasive archaeological fieldwork is known to have taken place within the proposed development area prior to this evaluation.

2.3 Aims of the Investigation

- 2.3.1 The investigation aimed to provide an assessment of the extent, condition, nature, character, quality and date of any archaeological remains encountered, as dictated by current best practice. To this end, the investigation comprised an archaeological trial trench evaluation of the site. The specific aims of the evaluation were to confirm the results of the geophysical survey in defining the site as having low archaeological potential through direct archaeological examination of ground conditions.

3. METHODS STATEMENT

3.1 General

- 3.1.1 CFA Archaeology Ltd follows the Institute for Archaeologists' Code of Conduct, Standards and Guidance for Archaeological Evaluation (IfA 2008a-d).

3.2 Evaluation

- 3.2.1 The brief required the evaluation of the proposed building footprint, which, in agreement with WSP Environmental Ltd, was to comprise three trial trenches, each 25m long by 1.8m wide. As the wheeled excavator had a bucket 1.5m wide, each trench was extended to 30m in length. A total area of 135m² was examined.
- 3.2.2 A plan of the proposed trenches was agreed with Ian Barnes of WSP Environmental UK prior to the fieldwork. These trenches were located to avoid known services and to provide a representative spread.
- 3.2.3 Nearby services, consisting of an electricity cable and a water pipe, had been marked out with paint prior to the evaluation. These were checked using a CAT Scanner and trenches were positioned to avoid them.
- 3.2.4 Due to the extreme compaction of the made ground deposits encountered on site, a toothed bucket was used to remove this material, with a smooth-bladed ditching bucket being used to remove the underlying ploughsoil and clean the surface of the natural subsoil. All such work was carried out under constant archaeological supervision.
- 3.2.5 Although the deposits encountered were both compact and stable, their depth meant that only the eastern ends of Trenches 1 and 3 could be accessed by archaeological personnel due to Health & Safety considerations.
- 3.2.6 Trench positions were recorded using industry standard differential GPS surveying equipment and all trenches were backfilled following recording.

4. ARCHAEOLOGICAL RESULTS

4.1 General

4.1.1 Three trial trenches totalling 135m² were excavated (Fig. 1). A summary of trench descriptions and dimensions is given in Appendix 1. In the text below context numbers are in bold and a full list is provided in Appendix 3. Other site records are detailed in Appendix 2 and 4.

4.2 Evaluation

4.2.1 The topsoil (**001**) across the area consisted of 0.3m of brown clay-silt and in all trenches this overlay a layer of made ground (**002**) varying from 0.1m to c.2.2m. This made ground was a very compact deposit comprising re-deposited clay and stones. It varied in colour from orange to grey and contained brick, concrete, scrap metal, plastic, tar/bitumen, wood, coal dross, glass and ceramics. These were not retained.

4.2.2 The made ground overlay a dark brown clay-silt (**003**) which appears to be a buried ploughsoil and which had a thickness of around 0.5m. A turf/grass surface was well preserved on the upper horizon of **003** in places.

4.2.3 The natural subsoil (**004**) was in general a creamy grey/yellow/orange sandstone boulder clay containing occasional coal flecks. There were field drains cut into the natural.

Trench 1

4.2.4 Trench 1 was aligned east to west within the southern part of the proposed building (Fig. 1). The trench measured 30m by 1.5m. The deposits within this trench consisted of 0.3m of topsoil (**001**) over 0.1m-1.5m of made ground (**002**), deepest in the west of the trench (Fig. 3). This overlay a buried ploughsoil (**003**) with a depth of 0.5m. Natural subsoil (**004**) was cut (**005**) in the west end of this trench by an unrecorded service trench which contained a ceramic pipe and a matrix of black coal dross and soil (**006**). This was sealed by **002**.

Trench 2

4.2.5 Trench 2 was aligned north to south within the middle of the proposed building (Fig. 1). The trench measured 30m by 1.5m. The deposits within this trench consisted of 0.3m of topsoil (**001**) over 1m-1.25m of made ground (**002**), deepest in the north of the trench (Fig. 4). This overlay a buried ploughsoil (**003**) with a depth of c.0.5m. The natural subsoil (**004**) was cut by field drains (**007**) containing unusually narrow (1 inch) diameter pipes (**008**).

Trench 3

4.2.6 Trench 3 was aligned east to west within the north of the proposed building and extended slightly into the proposed adjacent car park (Fig. 1). The trench

measured 30m by 1.5m. The deposits within this trench consisted of 0.3m of topsoil (001) over 0.1m-2.2m of made ground (002), deepest in the west of the trench (Fig. 5). This overlay a buried ploughsoil (003) with a depth of c.0.5m. Field drains (007) containing similar narrow diameter pipes (008) were recorded.

4.3 Finds and Samples

- 4.3.1 No environmental samples were retained during the evaluation. All finds were classified as modern and originated from made ground deposits, and were therefore discarded on site.

5. CONCLUSIONS

- 5.1 An archaeological evaluation covering 135m² was carried out within part of the Durham Gate Development, Spennymoor, County Durham.
- 5.2 Three trial trenches were excavated but no archaeological features other than field drains and modern services were identified. No pre-modern finds were present.
- 5.3 The evaluation has demonstrated that a buried ploughsoil is present across the site and that this is overlain by a considerable depth (up to 2.2m) of made ground. This made ground likely originates from the time of construction of the factory complex (the 1960s) or the adjacent road and roundabout, and probably represents the deposition of excavated materials and landscaping of the site following construction.
- 5.4 The trial trenching results confirm the geophysical survey results, with the strong magnetic debris accounted for by the depth of made ground containing bricks and metal debris.
- 5.5 The purpose of the evaluation was to establish the nature and extent of any buried archaeological features or deposits within the development area, and the evaluation met this aim.
- 5.6 A confidence rating in the reliability of the results of the evaluation has been undertaken. There is a high confidence in the descriptions, interpretations and relationships of the deposits recorded.

Archive

- 5.7 A full professional archive has been compiled in accordance with the project design and current IfA (2008d), UKIC (1990) and English Heritage guidelines (English Heritage 1991, 2006) and according to the Archaeological Archives Forum recommendations (Brown 2007). The paper and digital archive will be deposited in the Bowes Museum, Barnard Castle, County Durham on completion of the project. Copies of the report will be sent to Durham Council for inclusion in the Historic Environment Record.

- 5.8 The Arts and Humanities Data Service (AHDS) online database *Online Access to index of Archaeological Investigations* (OASIS) will be completed as part of the archiving phase of the project.
- 5.9 The Durham Council Historic Environment Record will be notified of the arrangements made for the deposition of the archive.

6. REFERENCES

Barnes, I 2010 *Written Scheme of Investigation for the Archaeological Investigation of the 'Durham Gate' Site, Spennymoor*. September 2010.

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7. ACKNOWLEDGEMENTS

CFA would like to thank Ian Barnes of WSP Environmental Ltd for commissioning the project, and Lee McFarlane of Durham Council Archaeology Section. Plant hire was provided by Anthony Stewart Ground Improvement Ltd of Rushyford. We are grateful for the assistance of the Carrillion employees on site.

Fieldwork was conducted by Ian Suddaby with the assistance of Nicholas Johnstone. The report was compiled by Ian Suddaby with illustrations by

Graeme Carruthers. The project was managed by Melanie Johnson with assistance from Martin Lightfoot, who also edited the report.

APPENDIX 1: Evaluation Trench Results Summary

Trench No.	Length (m)	Width (m)	Total Area (m ²)	Features
1	30	1.5	45	Ceramic pipe 005-6 (possible surface water drain)
2	30	1.5	45	Field drains
3	30	1.5	45	Field drains

APPENDIX 2: Photo Register

Colour Slides & B/W Prints

Shot	Description	Taken From	Conditions
1-4	General views of the site showing the topography	South	Sunny
5-8	General views of the site showing the topography	North	Sunny
9-10	Trench 1. Soil profile at the east end of the trench	South	Sunny
11-12	Trench 1. General view post-excavation	West	Sun/shade
13-14	Trench 1. Ceramic pipe (005-6) plan view	South	Dull
15-16	Trench 1. Ceramic pipe (005-6) general view	East	Sun/shade
17-18	Trench 2. Soil profile (001-4) at south end	West	Bright
19-20	Trench 2. General view post-excavation	North	Overcast
21-22	Trench 2. Soil profile (001-4) at north end	East	Overcast
23-24	Trench 3. Clay piped field drain (007-8) in section	SSE	Overcast
25-26	Trench 3. General view post-excavation	West	Bright/shade
27-28	Trench 3. General view post-excavation	East	Bright/shade

Digital

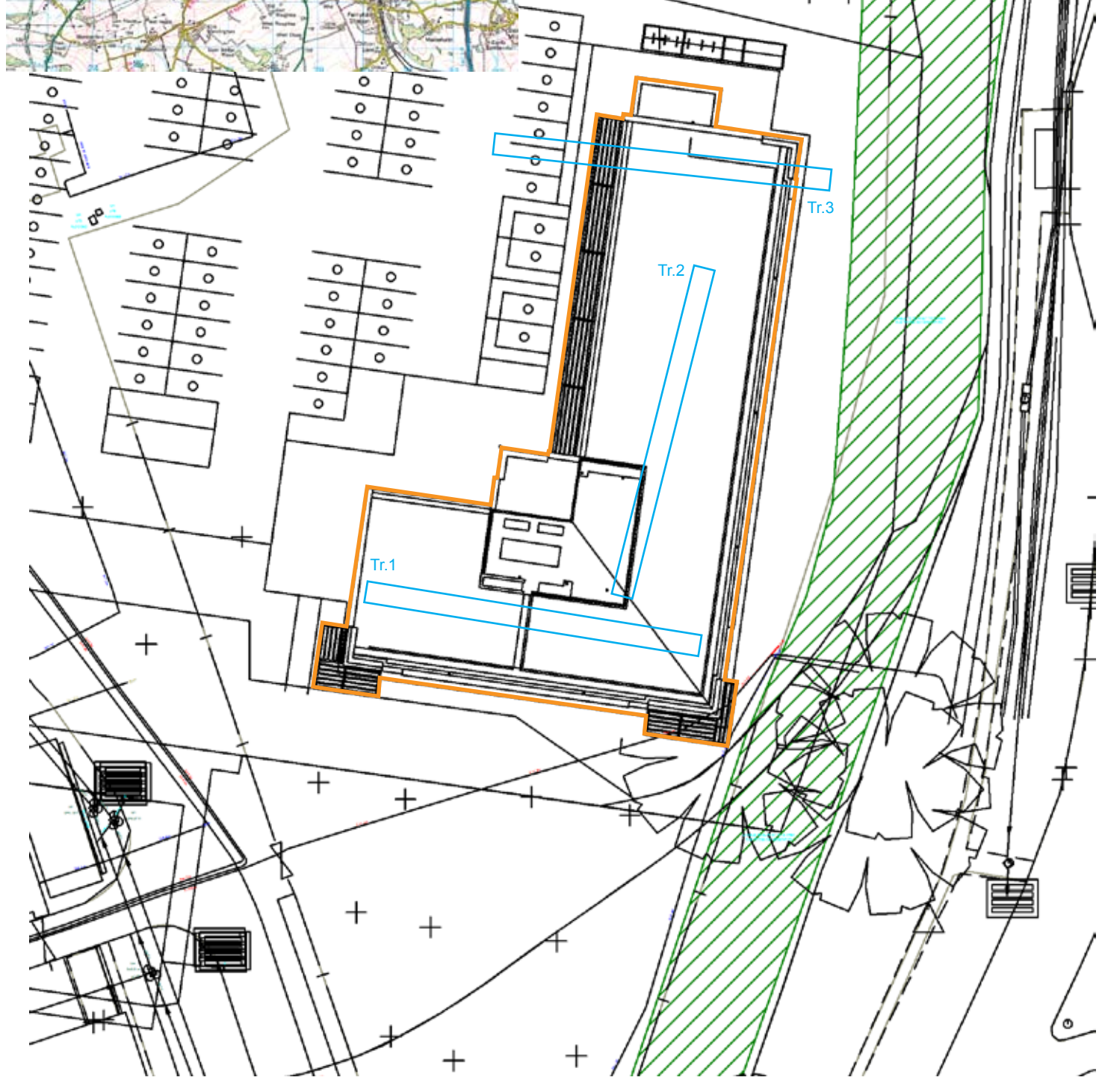
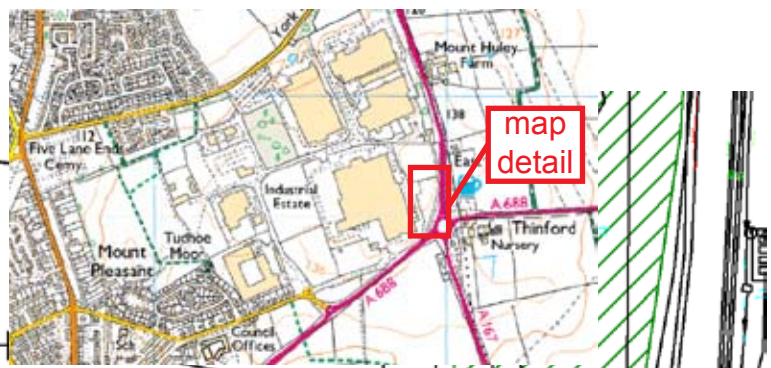
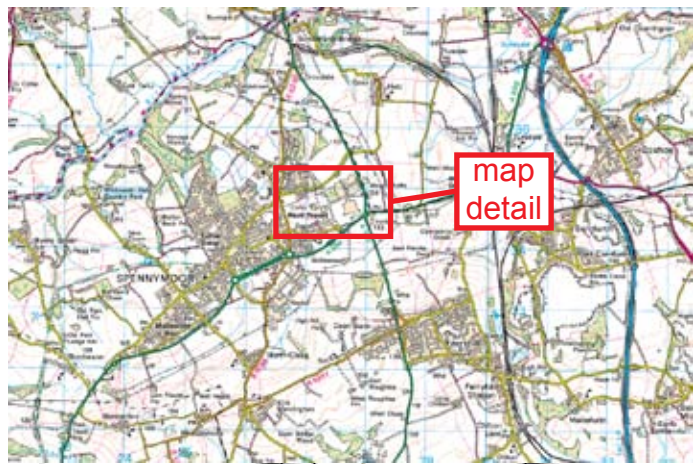
Shot	Description	Taken From	Conditions
1-2	General views of the site showing the topography	South	Sunny
3-5	General views of the site showing the topography	North	Sunny
6-8	General views of the site showing the topography	North-west	Sunny
9-10	Trench 1. Soil profile (00104) at the east end of the trench	South	Sunny
11	Trench 1. General view from the east during excavation	East	Sunny
12	Trench 1. General view post-excavation	West	Sun/shade
13	Trench 1. Ceramic pipe (005-6) plan view	South	Dull
14	Trench 1. Ceramic pipe (005-6) general view	East	Sun/shade
15-16	Trench 2. Soil profile (001-4) at south end	West	Bright
17	Trench 2. General view post-excavation	North	Overcast
18-19	Trench 2. Soil profile (001-4) at north end	East	Overcast
20-21	Trench 3. Clay piped field drain (007-8) in section	SSE	Overcast
22-24	Trench 3. Working shots showing deep excavation	East	Overcast
25	Trench 3. General view post-excavation	West	Bright/shade
26	Trench 3. General view post-excavation	East	Bright/shade

APPENDIX 3: Context Register

Context No.	Trench	Description
001	All	Topsoil. Brown clay-silt
002	All	Made ground. Very compact re-deposited clay and stones. Varies in colour from orange to grey. Occasional inclusions of brick, concrete, structural metalwork, plastic, tar/bitumen, cut wood, coal, coal dross, glass and ceramics
003	All	Buried ploughsoil. Compact dark-brown clay-silt
004	All	Natural subsoil. Compact sandy clay and stones. Varies in colour from creamy yellow to orange and creamy blue
005	1	Linear cut for modern ceramic pipe. Sealed by 002
006	1	Fill of 005. Black coal dust & topsoil with ceramic pipe
007	All	Multiple linear cuts for field drains
008	All	Very narrow (1 inch int. dia.) ceramic field drain pipes

APPENDIX 4: Field Drawings Register

Drawing no.	Description	Scale
1	Trench 1, west end showing service trench 005-6	1:100
2	Trench 2, general plan showing field drains 007-8	1:100
3	Trench 3, general plan showing field drains 007-8	1:100



Key:

- evaluation trenches
- new building footprint

10m 0 20m

Scale: 1:500@A4

Fig. No: 1 Revision: A Client: WSP Environmental UK on behalf of CAST

Title: Trench plan showing the footprint of the proposed building

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Fig. 2 General view of the site's topography from the south, showing the mound of made ground



Fig. 3 Trench 1, general view from the east showing the made ground deepening to the west



Key:	Fig. No:	2-3	Revision:	A	Client:	WSP Environmental UK on behalf of CAST				
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Fig. 4 Trench 2, soil profile at the north end of the trench



Fig. 5 Trench 3, General view from the east during excavation showing the depth of made ground to the west

Key:	Fig. No:	4-5	Revision:	A	Client:	WSP Environmental UK on behalf of CAST
	Title:					
Scale:	Project:	Durham Gate, Green Lane Industrial Estate Spennymoor, County Durham				
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