COLWICK FLOOD DEFENCES
NOTTINGHAM.

Watching Brief Report

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Project Code - COF

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Trenching along the edge of the existing flood defence, Area 03.

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Trent & Peak ARCHAEOLOGY

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SUMMARY

- Trent & Peak Archaeology was contracted by Black and Veatch on behalf of the Environment Agency to conduct an archaeological watching brief on the enhancement of flood defences around the south eastern tip of Colwick, Nottinghamshire.

- The site of the watching brief lies between SK 61150 39935 and SK 61857 39694.

- The flood defences at this point loop round a new housing estate and industrial area.

- The ground works monitored followed the line of the existing flood bank which runs northwest/south east from River Road until it meets the Trent when it turns and is orientated northeast/southwest

- A desk based assessment had noted that the Nottinghamshire S.M.R. 2037 recorded finds dated to the Neolithic adjacent to the flood bank. (Allen and Appleton, 2005, Figure 8).

- An archaeological evaluation carried out by Trent & Peak Archaeology and Archaeological Project Services did not record any archaeological deposits along the line of the flood bank. (Lovekin and Walker, 2006)

- Top soil stripping, to a depth of between 200mm and 300mm was monitored along the length of the ground works.

- The majority of intrusive groundwork did not penetrate below the level of the existing flood defences and this meant that there were only limited opportunities for the uncovering and recording of archaeological remains.

- Deeper trenches penetrating below the level of the existing flood defence were excavated in Area 03 and Area 05 to accommodate sheet piling. Representative sections of these wee recorded.

- Buried soil horizons were recorded in Area 05 where trenching penetrated below the level of the existing flood defences. No dating evidence was present and the period to which the horizons belong remains unclear.

- Modern industrial features were recorded in Area 04 comprising a subterranean concrete chamber. This was recorded by laser scanner and a separate report produced. This report is attached as Appendix 2.

- Much of the area monitored was through land that has previously been heavily industrialised including warehousing, processing (sugar beet) and railway marshalling yards. Significant ground disturbance is likely to have taken place as a result leading to a low survival rate fro any archaeological resource.

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1. INTRODUCTION

1.1. Trent & Peak Archaeology was contracted by Black and Veatch Ltd on behalf of the Environment Agency to conduct an archaeological watching brief on ground works associated with the enhancement of existing flood banks at Colwick, Nottinghamshire.

1.2. The flood bank consisting of a linear earthwork lies between SK 61150 39935 and SK61857 39694 The bank forms a loop protecting a recent housing development a recreation ground and an industrial area. (See Figure 1, Site plan.)

1.3 All intrusive ground work was monitored during the course of the watching brief.

2. PROJECT BACKGROUND

2.1 The enhancement of the existing flood defences was a part of a wider scheme that took in the left bank of the Trent from Shardlow, Derbyshire, to the eastern extent of Nottingham at Colwick.

2.2 The civil engineering was carried out by Jackson's Civils with archaeological monitoring by Trent & Peak Archaeology.

3. ARCHAEOLOGICAL BACKGROUND.

3.1. Prior to the start of the ground works a desk based assessment and an archaeological evaluation had been carried out. Both of these pieces of work covered the whole of the Left Bank Scheme of which the work covered in this report is a part.

3.2 The desk based assessment noted that the Nottinghamshire SMR (Sites and Monuments Record) records a find spot of Neolithic material immediately to the northwest of that portion of the bank that runs along the edge of the Trent (SMR No. 2037). (See Figure 1 for location). No detail is given of the nature of the find, e.g. flint, pot etc. in the desk based assessment. (Allen and Appleton, 2005).

3.3 An archaeological evaluation was carried out jointly by Trent & Peak Archaeology and Archaeological Project Services. Three evaluation trenches were excavated and recorded but no archaeological features or deposits were present. (Lovekin and Walker 2006).

3.4 For parts of the study area to the north east of the housing estate the flood bank passes former industrial areas that are now derelict and in the process of demolition. A major element of this is the former British Sugar Corporation warehouse. The area as a whole is close to the now redundant Colwick sidings which had, until its closure, been an important part of the transport infrastructure of the Nottingham Area.

4. OBJECTIVES

4.1. The objective of the archaeological watching brief can be stated as:
To identify the presence of any archaeological remains affected by any intrusive aspects of the development and where preservation in situ is not merited or is impractical; ensure an appropriate level of *preservation by record*. Where practical (within the constraints of the watching brief and development), this will include an assessment of the overall extent, date and state of preservation of archaeological remains. Any features of geoarchaeological significance will also be recorded and where there is the potential for palaeoenvironmental data, an appropriate level of sampling will be undertaken.

4.2 All recording will result in 'the preparation of a report and ordered archive', in line with the guidelines of the IfA Institute for Archaeologists (*Standard and Guidance: for an archaeological watching brief* published October 1994, revised September 2001 and October 2008).

5. METHODOLOGY

5.1 All topsoil was removed using a bladed bucket on a tracked machine. The stripped top soil was not removed from site but stored to be used to re cover the flood bank once the improvements are complete.

5.2 Once the top soil was removed the existing bank was built up using clay imported on to the site.

5.3 The top soil stripping was monitored for any archaeological features, deposits and artefacts. The monitoring was carried out either whilst the soil stripping was in progress or immediately afterwards whilst the exposed surfaces were still available for inspection. All trenching below the level of the existing flood defence was carried out under continuous archaeological supervision.

5.4. The groundworks were recorded by scale drawing (sections at 1:20 and plans at 1:50) and photography (digital images and 35mm black and white film).

5.5. All archaeological features were given a unique context number e.g. 0001. Any finds were given a unique finds code, e.g. AAA and their location recorded by GPS.

5.6. Plans and sections of features were drawn on perma-trace at scales of 1:20 and 1:50.

6. RESULTS.

Area 01.

6.1 Along the whole length of Area 01, Figure 2, the south west facing edge of the existing bank was stripped to the level of its base. (Plate 1) This exposed an area of undisturbed ground c. 3m wide. There were no archaeological features or deposits uncovered during this process and no artefacts revealed.

Area 02.

6.2 The top of the existing bank, Figure 2, was stripped to an average depth of 200mm.Sstripping exposed the modern material that had gone into the construction of the existing flood bank. (Plat 2, Plate 3) This was primarily made up of rubble set in a matrix of red clay similar to the material that was used to raise the height of the flood bank as part of the current work (Plate 4).

6.2.1 There were no archaeological features or artefacts exposed as a result of the soil stripping.

6.2.3 At the north east extent of Area 02 a deep excavation took place in order to ascertain the ground make up and to establish the level of services both of which may have had implications for the design of intrusive work in Area 03.

6.2.4 The depth of this excavation precluded entry in order to examine the exposed sections but a photographic record was made. The excavation cut through made ground which formed

the underlay of the existing bank including large blocks of concrete, and rubble in a dark grey ashy matrix, (Plate 10)

Area 03.

6.3, Adjacent to the former British Sugar Corporation warehouse, Figure 2, a lead trench was excavated along the north western edge of the existing flood bank. The trench was to provide a stable area for the insertion of sheet piles between which the enhanced defence would sit.

6.3.1 The lead trench was initially excavated to a depth of 400mm (Plate 5). A deeper trench was then excavated through the centre of this to a further depth of 600mm giving an overall excavation of 1m (Figure**) Sheet piles inserted at 2.5m intervals (Plate 6).
6.3.2 The trench cut through the existing metalled surface and the following stratagraphic sequence was recorded:

Context	***Thickness***	***Description***
0001	100mm	black tarmac, modern
0002	40mm	pale grey aggregate
0003	380mm	grey ash and cinders, underlay tarmac surface
0004	580mm	orange/brown silty clay

6.3.3 The upper layers, 0001 – 0003, (Figure **), were probably laid in the mid 20th century during the period when the BSC warehouse was still operational. The basal layer, 0004, has been interpreted as an alluvial deposit associated with flooding by the Trent along this stretch of the river.

6.3.4 The lead trench was continually monitored during its excavation.

Area 04.

6.4 Approximately 300mm to the north east of Area 03 a below surface feature was exposed by ground works.

6.4.1 The feature comprised a concrete tunnel running north to south. It sloped towards the south (Plate 8).

6.4.2 The structure was recorded by laser scanner and an interim report was produced for the client, Black & Vetch. This report is attached as Appendix 2.

Area 05.

6.5.1 To the east of Area 04 a lead trench was excavated to accommodate sheet piles in order to raise the height of the existing flood bank.

6.5.2 The lead trench was excavated to a depth of 1m x 400mm wide. Sheet piles were inserted at an average distance of 2.5m (Plate 9).
6.5.3 The following stratagraphic sequence was recorded in Area 05:

Context	***Thickness***	***Description***
0005	250mm	orange/brown silty clay, alluvial
0006	100mm	dark brown loam
0007	300mm	orange brown silty clay, alluvial
0008	150mm	dark brown loam
0009	200mm, observed	orange/brown silty clay, alluvial

6.5.4 Buried soil horizons, 0006, 0008, separated by episodes of alluviation of uncertain duration were observed in the section of the trench. No finds or other dating evidence was

present in either the soil layers or the alluvium so the sequence cannot at present be dated.

Area 06.

6.6.1 Only minimal intrusion took place in Area 06 comprising a shallow scrape along the top of the existing flood defence extending to a maximum depth of 100mm (Plate 7).

6.6.2 The groundwork exposed the upper strata of the existing flood defence. There were no archaeological features or deposits revealed and no artefacts uncovered.

Area 07.

7.1 Throughout the entire length of Area 07 the top of the existing flood defence was removed prior to re building.

7.2 There was no intrusive ground work along the edge of the defence and no trenching.

7. DISCUSSION

7.1 During the monitoring of the ground works there were no significant archaeological features, deposits or artefacts revealed.

7.2 The ground works in Area 01, 02 and 06 did not penetrated below the made up ground which constitutes the material of the existing flood defence. In many places the made ground comprised earth mixed with brick and concrete rubble.

7.3 The presence of the modern rubble is consistent with what was recorded in the evaluation carried out in 2006. In this the depth of the made up ground is recorded as 0.9m and 1.0m in trench C4 and 0.65m in trench C6. In some of the evaluation trenches possible alluvial deposits were recorded but these were at depths that the ground work monitored in this report did not reach.

7.4 Ground penetration below the level of the existing flood bank occurred in Area 03 and Area 05. Alluvial undisturbed deposits were recorded in Area 03 but there were no archaeological features or deposits revealed. In Area 05 two probable buried soil horizons were recorded. Both of these were overlain by alluvium indicating episodes of flooding. The duration and dating of these both the buried soil horizons and the alluvium remain uncertain due to an absence of artefactual evidence.

7.5 In Area 04 a subterranean chamber was uncovered during the groundworks. This took the form of a rectangular concrete tunnel running parallel to the Trent. No record of the structure appears to exist according to the contractors, Jackson's Civils but the likelihood is that it relates to the site at a time when river transport was still an important aspect of industrial activity at Colwick. Although there is no precise dating for the structure it probably dates to the mid 20th century.

8. CONCLUSIONS

8.1 The nature of the groundworks associated with the enhancement of the flood defences gave only limited opportunities for revealing significant archaeological features or deposits.

8.2 Potentially significant are the buried soil horizons recorded in Area 05 but the level of their exposure mitigated against being able to either date these or record their surviving extent.

8.3 Modern features were encountered in Area 04, the concrete chamber, which in all probability date to the mid 20th century and are to be associated with recent industrial activity at Colwick. The lack of any documentary record of the structure means that at present its function remains obscure.

6.4 A high level of industrialisation from the late 19th century through to the mid/late 20th century has probably resulted in a low survival rate for any archaeological resource that may have been present along this section of the river Trent.

Appendix 1. Summary Context list

Context	Area	Description
0001	03	Black tarmac - modern
0002	03	Pale grey aggregate
0003	03	Grey ash and cinders
0004	03	Orange/brown silty clay
0005	05	Orange/brown silty clay
0006	05	Dark brown loam
0007	05	Orange/brown silty clay
0008	05	Dark brown loam
0009	05	Orange/brown silty clay

Appendix 2.

COLWICK FLOOD ALLEVIEATION SCHEME

Interim report of a laser scan of the Concrete Chamber at Colwick.

Prepared by L.Platt and Dr D. Walker.

August 2011

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INTERIM REPORT OF A LASER SCAN 0F THE CONCRETE CHAMBER AT COLWICK.

1. INTRODUCTION.

1.1 Trent & Peak Archaeology was commissioned by Black and Veatch to record by laser scan a concrete chamber that had been exposed by Jackson Civil Engineering in the course of enhancing the flood defences on the left bank of the Trent at Colwick Nottingham.

1.2 The recording was carried out as part of an overall archaeological watching brief on the intrusive ground works associated with the enhancement of the flood defences.

2. METHODOLOGY.

2.1 The survey was undertaken using a Leica HDS 6100 phase based laser scanner with a range of approximately 80m.

2.2 Data was captured at 'high' resolution giving point spacing of 6.2mm at 10m.

2.3 Surveys were registered together and texture-mapped using Leica Cyclone 7.1 software and visualised with Pointools View Pro and AutoCAD.

2.4 The survey was undertaken according to the guide lines set out by English Heritage (Andrews D. (ed), 2009. *Metric Survey Specification for Cultural Heritage*. English Heritage).

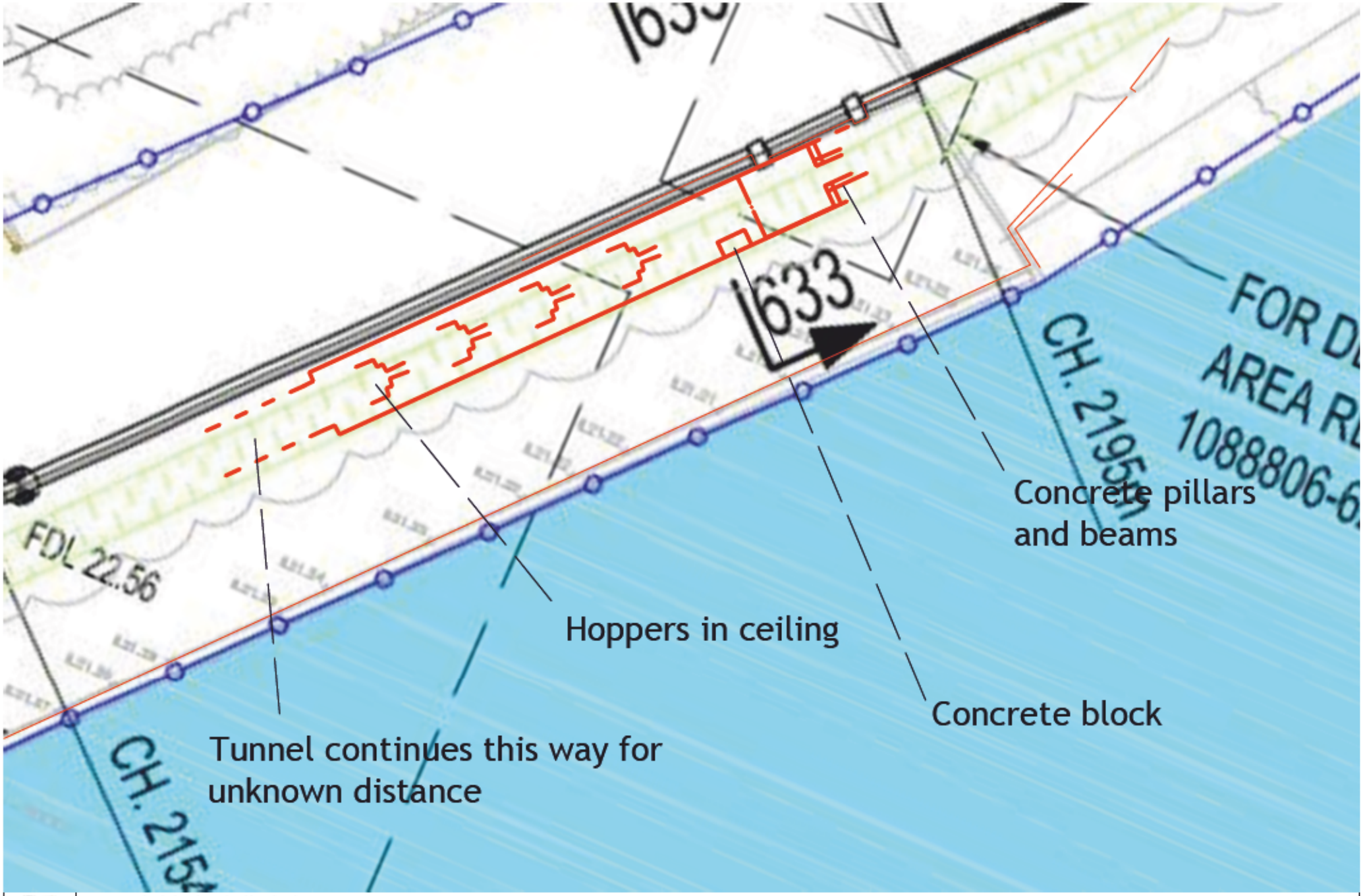
3. RESULTS

3.1 The chamber was recorded for a length of approximately 25m. The structure slopes down to the south west and at the south western end is flooded.

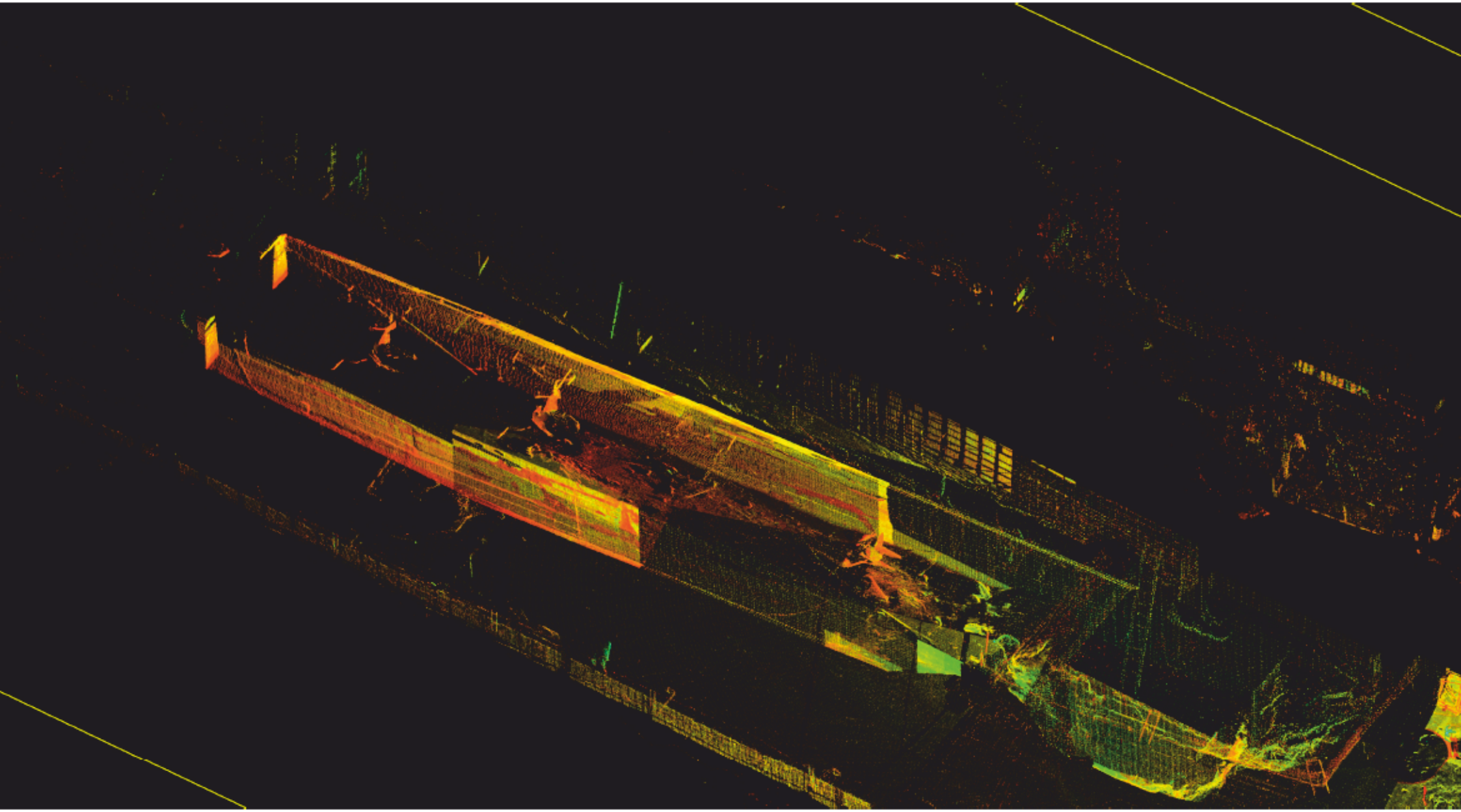
3.2 From such visual inspection as was possible (entry into the chamber was not allowed) would appear to have been shuttered concrete. What appears to be hoppers set into the roof would have given access to the chamber from above. Plate 1.

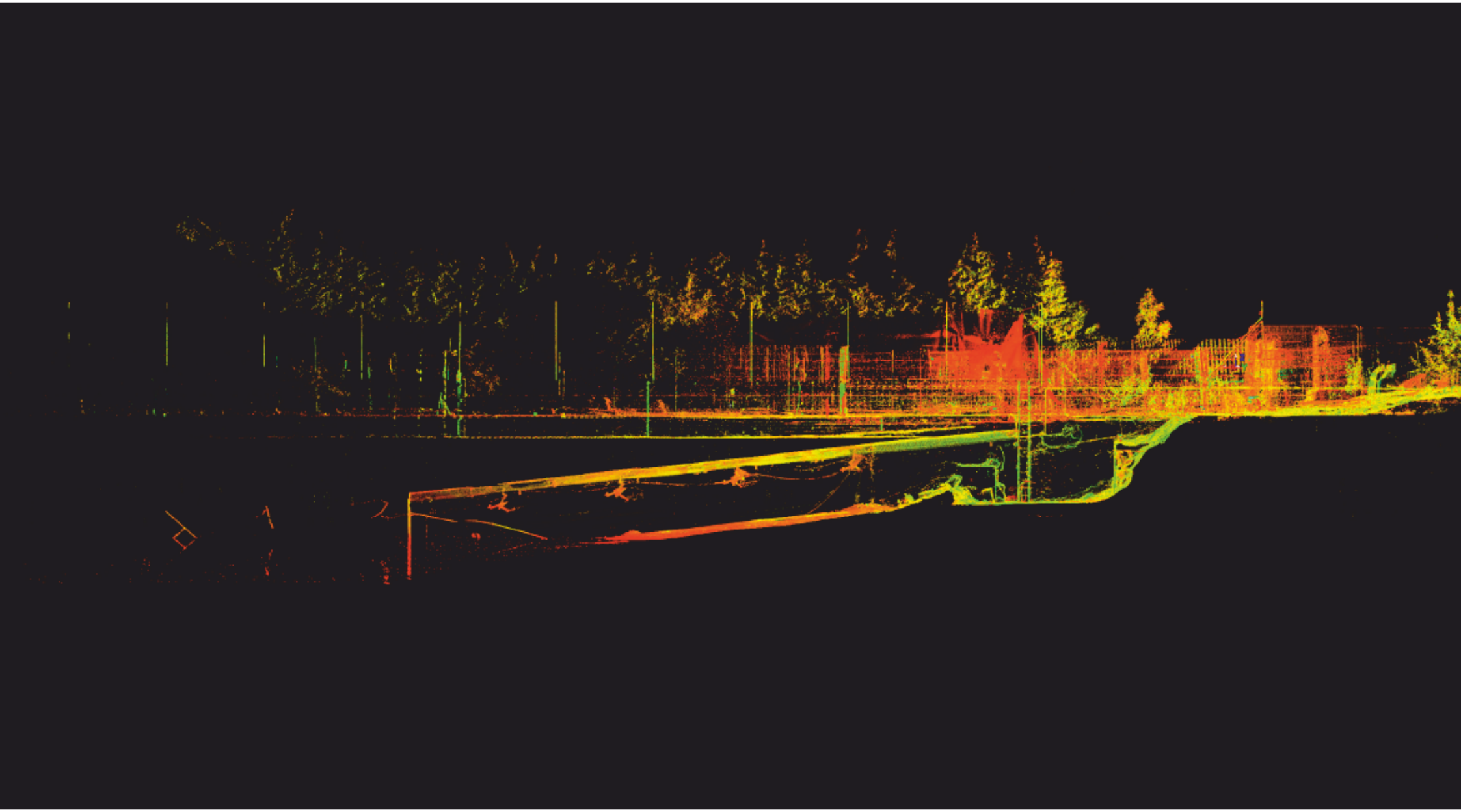
3.3 When the chamber went out of use a further concrete layer was laid over the top thus sealing the hoppers and closing off the entire structure. Plate 2

3.4 The area until recently (up to the mid 1970's) was a railway marshalling yard and a large processing plant for the British Sugar Corporation. The chamber could be speculatively linked to the BSC processing plant. To confirm this however further documentary analysis would be necessary beyond the scope of the current works.



COF: Colwick Flood Alleviation
Location and plan of concrete tunnel on supplied pdf plan 108806-6000-0007-C
Scale 1:200 at A4 DW 12/08/2011





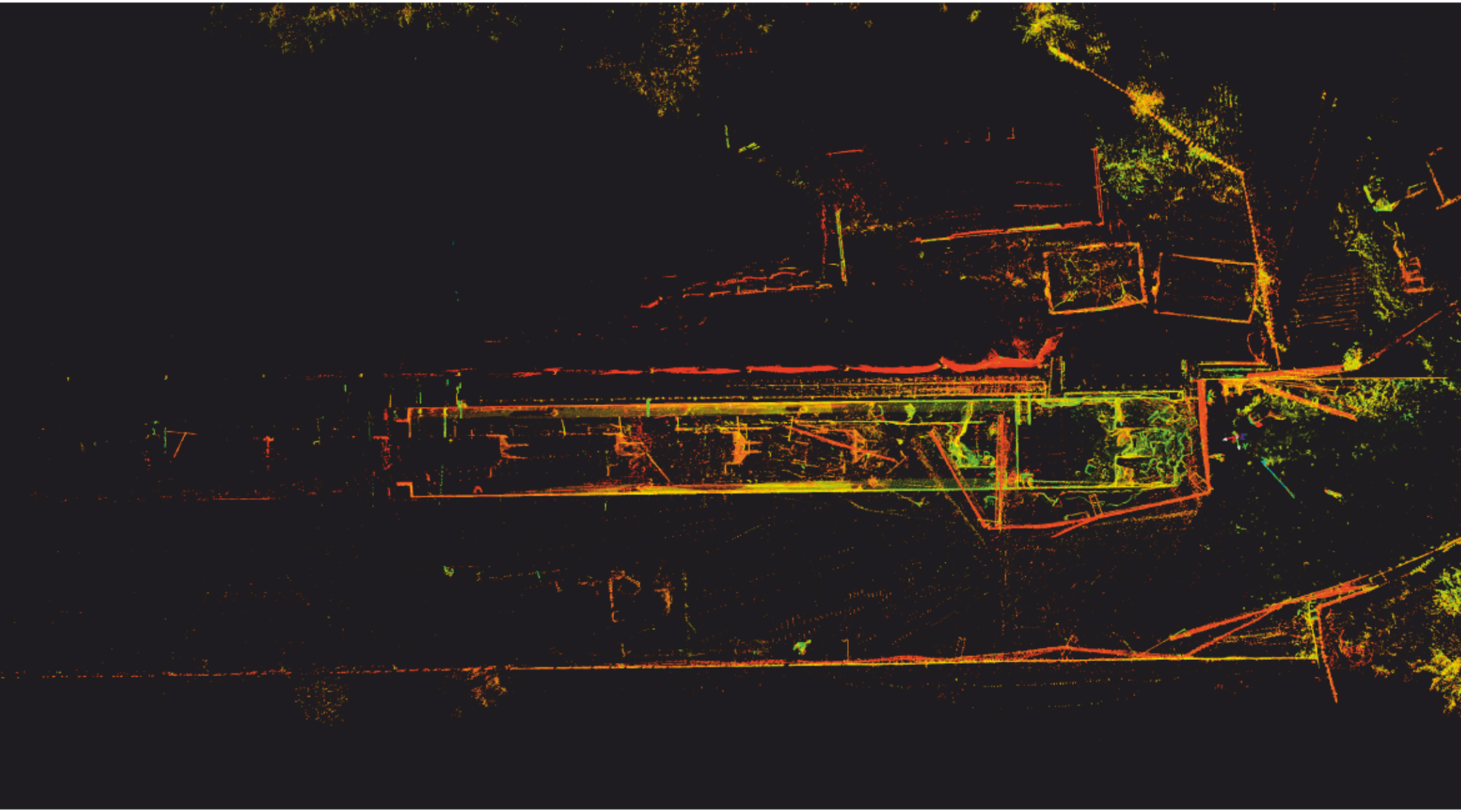


PLATE 1. Looking down the chamber from the entrance. Looking south.

PLATE 2. Partially exposed entrance to the chamber. The original upper surface is immediately below the scale with the newer surface above.

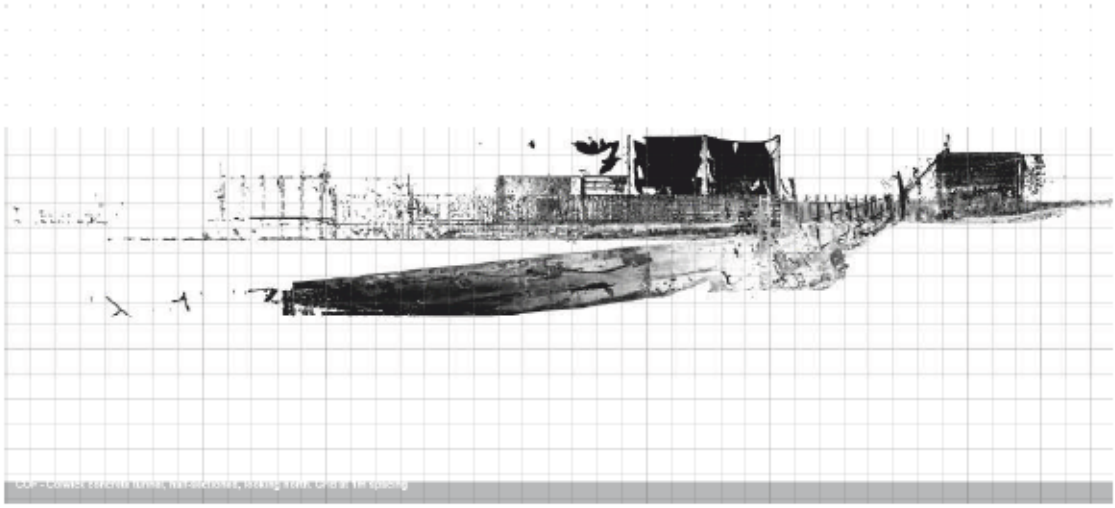


Plate 3. Section of chamber. Grid is 1m sq.

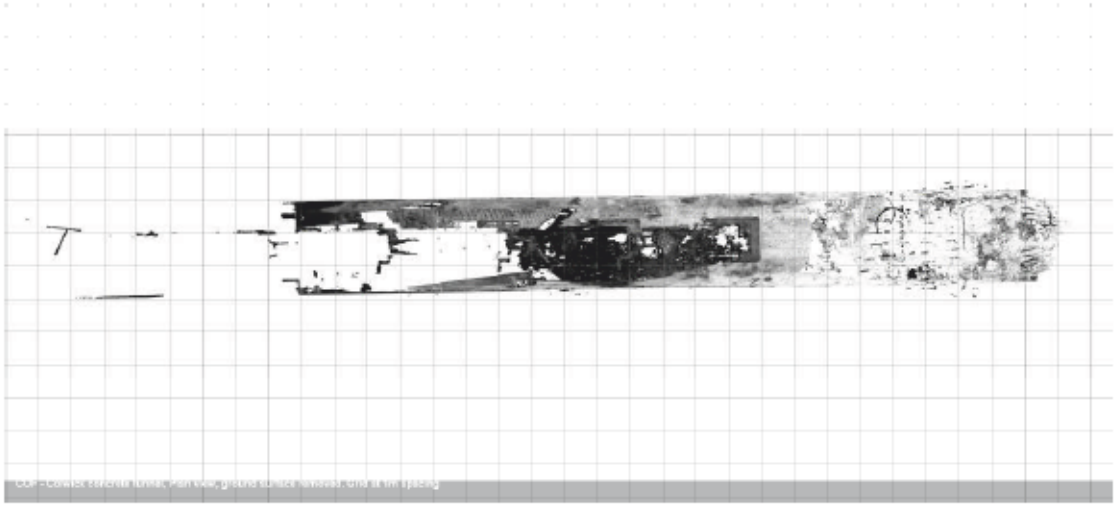
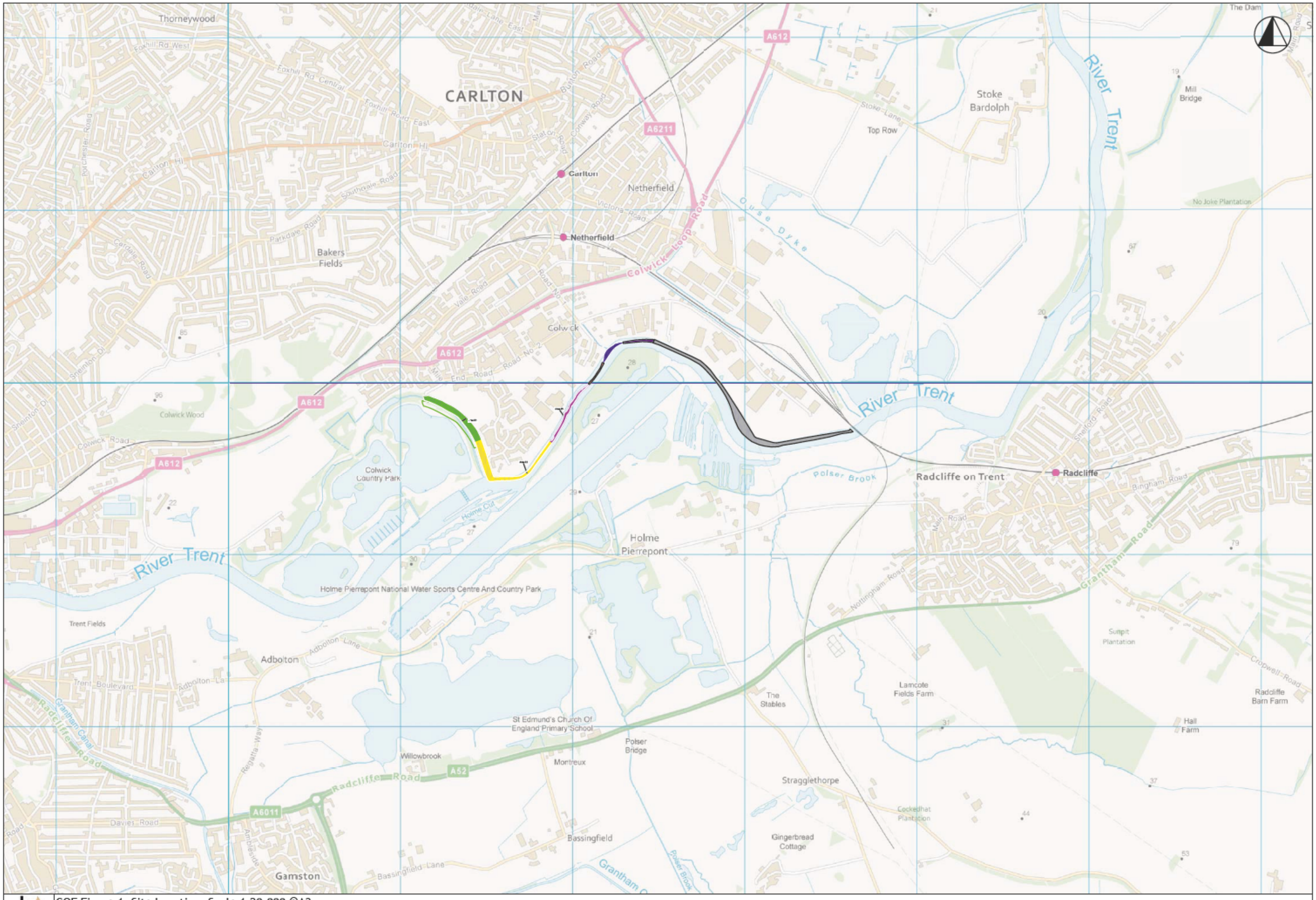
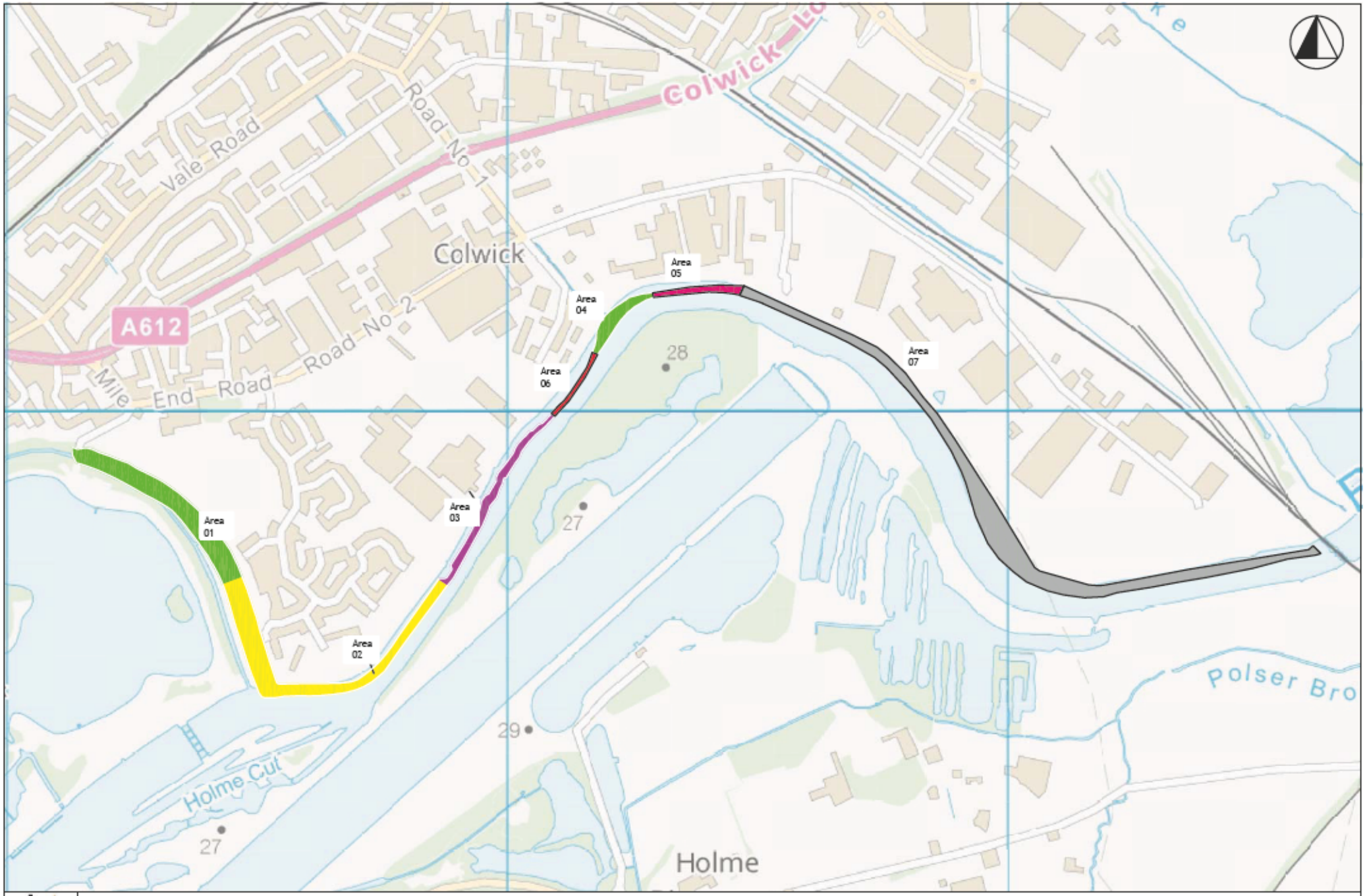


Plate 4. Plan of chamber. Grid id 1m sq.



COF Figure 1. Site Location. Scale 1:20,000 @A3.



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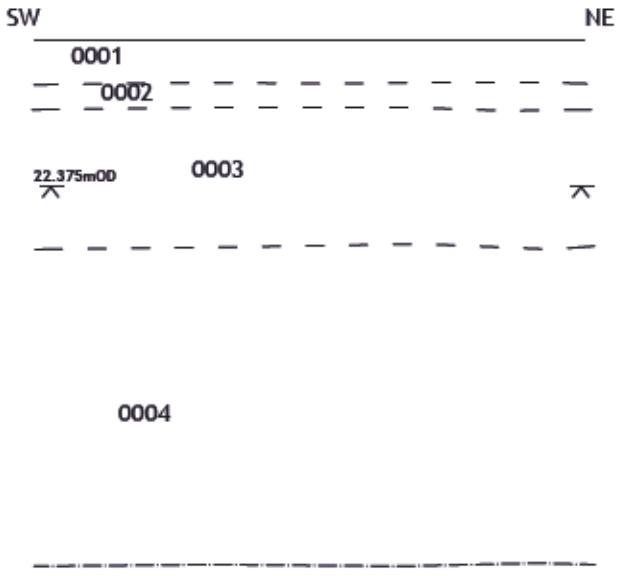
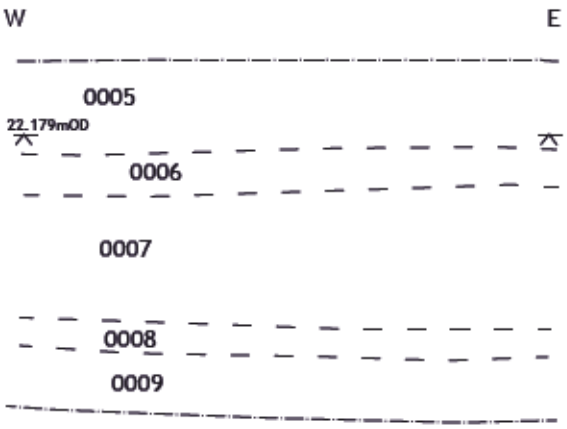
COF Figure 2. Site plan showing areas monitored during th eenhancement of the flood defences at Clowick, Nottingham. Scale 1:10,000 @A4



South - east facing section of Area 03.

0001	Tarmac surface - modern
0002	Pale grey aggregate4
0003	Grey ash and cinders
0004	Orange brown silty clay



South - east facing section of Area 05.

0005	orange/brown sily clay
0006	dark brown loam
0007	orange/brown silty clay
0008	dark brown loam
0009	orange/brown sily clay

COF Figure ** Representative section of trenches for sheet piling in Area 03 and Area 05. Scale1:20@A4.

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PLATE 1. Stripped flood bank, Area 01, looking south-east from River Road.

PLATE 2. Stripped flood bank, Area 02, looking north-east.

PLATE 3. Stripped flood bank, Area 02, looking south-east.

PLATE 4. detail of rubble directly beneath the topsoil on the flood defence in Area 02.

PLATE 5. Topsoil stripping on the edge of the existing flood defence in Area 03. Looking south-east.

PLATE 6. Inserting sheet piles in Area 03. Looking south-east.

PLATE 7. Area 06 after top of flood defence stripped. Looking north-east.

PLATE 8. Interior of concrete chamber, Area 04. Looking south-east.

PLATE 9. Area 05, sheet piles inserted in lead trench. Looking south-east.

Plate 10. Deep excavation at the eastern extent of Area 02.