Evaluation Commissioned by Gwynedd County Council

Fieldwork

by

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> Ysgol Arbennig Archaeological Evaluation

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Introduction

NGR

Centred on: SH 6025 3833

Location and Topography (Figure 1)

The site of the proposed Ygsol Arbennig is a north facing field behind the Snowdonia Business Park, Penrhyndeudraeth. The field is bounded to the north by wetlands and the business park, and to the south by agricultural land. There is a general north facing slope over the development area, however in the western half of the area this appears as a series of marked terraces which are assumed to be of human origins. The land is under rough pasture bordered to the south and east by a belt of semi-mature and mature trees between the modern fence and the original dry-stone wall. There is also a small area of rough shrubby growth within the development area.

The geology of the immediate area is bedrock of Dol-cyn-afon formation of a metamorphic mudstone and siltstone. This formed approximately 479 to 488 million years ago. (www.bgs.ac.uk)

Archaeological Background

Gwynedd County Council intend to construct a new school for children with special educational needs on a plot of land to the south of the Snowdonia Business Park, Penrhyndeudraeth. The Gwynedd Archaeological Trust were commissioned to carry-out a desk-top study and "walk-over survey" in early 2014 (Wilson Parry and Evans 2014). This made a number of recommendations including the excavation of five evaluation trenches over some of the features located and a more detailed record of some of the minor features.

SUMMARY

The topographic survey defined three terraces which cross the western half of the development area together with areas of informal quarrying, particularly in the eastern and northern sections of the development. Other features, originally located by the Gwynedd Archaeological Trust were also surveyed and their size and form recorded.

Five trenches were excavated, four of these were over features located by the Gwynedd Archaeological Trust, whilst the fifth was designed to provide a profile across one of the terraces. The other trenches located an agricultural building, seen on the 1917 Ordnance Survey map, sampled a possible cairn, investigated a spread of stone blocks thought to be the possible site of a building and sampled a possible quarry. The stone spread, however, proved to be a modern dump which filled and spilled out of a small quarry.

The only dating evidence recovered from the evaluation trenches suggests that the majority of these features are of 19th or 20th Century date.

Methodology

A topographic survey of the archaeological features within the development area was carried out using a Geodolite 506B Total Station. The data was logged using an NRG Data Logging System v 2.59c and processed using NRG for Windows 2011 Engineering Surveying System. The resultant drawing (Figure 2) was merged with the previous survey, WDA/Snowdonia/12-05, by Compass Land Surveys.

Five trenches were excavated across selected features (Figure 5), these were:

- Tr 1 sampled one of the hollows in the south-eastern corner of the development area identified as Feature 8 in Gwynedd Archaeological Trusts report (Wilson Parry and Evans 2014, 17-18)
- Tr 2 sampled the northern end of a small mound identified as a possible clearance cairn (Feature 9, Wilson Parry and Evans 2014, 18)
- Tr 3 located part of a building shown on the 1917 Ordnance Survey map (Merionethshire XI.13). This was recorded as Feature 5 by the Gwynedd Archaeological Trust, Wilson Parry and Evans 2014, 17)
- Tr 4 evaluated the spread of stone rubble (Feature 6, Wilson Parry and Evans 2014, 17)
- Tr 5 provided a profile across the middle terrace which crosses the western half of the development area.

The topsoil and any archaeologically inert deposits were removed with a back-acting excavator with a smooth faced ditching bucket. There-after all work was carried out by hand.

Topographic Survey

The results of the topographic survey are shown in Figure 2. These incorporate both features recognised by the Gwynedd Archaeological Trust (Wilson Parry and Evans 2014) and new features recorded as part of this phase of work.

The track into the western side of the development area (Feature 1, Wilson Parry and Evans 2014, 16). This enters the development area through a rusting metal gate, heading in a roughly north eastern direction (Plate 1). It runs close to the northern side of the stone spread (Feature 6) before petering out. There is some evidence that there was a short spur which lead directly to Feature 6. The track has a hard surface, partly though use and partly with dumps of stone. Generally, the track is level with the surrounding landscape, however, near to Feature 6 the southern side of the track has been terraced into the hillslope leaving a step, approximately 0.20 m high (Plate 2). The track is approximately 3.00 m wide. The course of this track suggest that it is related to the spread of building debris (Feature 6) which is a dominant feature of this part of the site. Wilson Parry and Evans (2014, 15) suggest it may relate to the track seen on the First Edition Ordnance Survey map, however, if this is the same track leading to the building on the 1917 Ordnance Survey map (Figures 3 and 4) then this track dates to after 1917.

In the north western corner of the development area there is a modern gateway (Feature 3, Wilson Parry and Evans 2014, 16) through the dry stone wall (Feature 4, *ibid* 16) which defines the northern and eastern boundary of the fields within the development area. The gateway (Plates 3 and 4) has a modern galvanised gate of a standard size with galvanised posts suggesting that even if there had been an opening here before it has been re-defined to allow the passing of modern farm machinery. The wall is up to 1.75 m high and 0.70 m wide and is constructed of blocks of slatev rock which are assumed to have been quarried from a series of informal quarries within the development area. The approach to the gate is at the bottom of a marked slope which defines the western edge of one of the development areas (Plate 5). The correlation

between the 1917 Ordnance Survey map and the recent survey suggests that the top of the break of slope at this point defines the western boundary of one of the fields.

At SH 60188 38388 there is a small, oval mound, 3.62 m long, 2.47 m wide and up to 0.84 m high (Plate 6) which was recorded as Feature 9 by the Gwynedd Archaeological Trust (*ibid* 19) Few further features could be determined prior to excavation, however Trench 3 (see below) was designed to determine the character of this mound. The mound occupies a slightly sloping site with the general slope being to the north and west.

Adjacent to the eastern end of the track (Feature 1) is a large spread of building debris (Feature 6, *ibid* 17) covering an area of 17.77 x 16.02 m (Plate 7). It is formed of stone blocks which are typically 0.40 x 0.25 x 0.15 m in size, however there are also a few very large, squared boulders up to 1.10 x 1.10 x 0.50 m in size (Plate 8). Whilst the majority of the stones were of a shaley lithology, typical of the immediate area, the large blocks were of a fine grained granite. This is typical of materials guarried at the Minffordd Quarry approximately 1 km to the North West. The spread of building debris also included concrete blocks, fragments of wooden telegraph poles and concrete paving blocks. The debris was deposited in a series of linear dumps which lead to the apparent edges shown in purple on Figure 2. These were originally thought to be possible wall lines, however on further investigation they proved to be a product of the method of deposition.

Feature 5 (*ibid* 17) was based on a building shown on the First Edition Ordnance Survey map. No obvious signs of a building were recorded, however the area includes a distinct break of slope, which corresponds to an old field boundary shown on the 1917 Ordnance Survey map (Figure 4), and a hollow in the surface above the break of slope. This hollow is roughly rectangular in shape with an extension leading to the south and east. The main area is 16.20 m x 15.15 m in size and up to 0.40 m deep (Plate 9), whilst the extension is approximately 6.0 m wide and 9.7 m long. Neither of these hollows reflects the footprint of the building shown on the 1917 Ordnance Survey map (Figure 4) which crosses the junction between the two hollows.

A linear hollow (Feature 11, *ibid* 18) runs across the development area and was interpreted as the remains of a field boundary by the Gwynedd Archaeological Trust. The hollow is 4.35 m wide and approximately 0.12 m deep (Plate 10) possibly suggesting that it may have been a track running alongside the field boundary shown on the 1917 Ordnance Survey Map (Figure 4).

In the north eastern corner of the development area the Gwynedd Archaeological Trust located two, small, hollows (Feature 8, *ibid* 17-18) which they interpreted as quarry pits. The southern hollow (Plate 11) is at least 4.00m in diameter, although it extends beyond the limits of the development, and was 0.35 m deep. The northern hollow (Plate 12) also extends beyond the development area. It was at least 6 m in diameter and was 0.45 m deep. These undoubtedly relate to small scale quarrying in this corner of the field, however they probably also relate to the much larger area of probable quarrying (Plate 13) only 40 m to the south. This covers an area of at least 37.0 x 24.2 m and reaches a depth of 0.60 m at its southern end, although the depth tends to reduce to approximately 0.30m at the northern end of the feature. The somewhat irregular shape of the feature probably suggests this a series of intercutting informal quarries.

Other signs of small scale quarrying were also noted. At SH 60283 38299 there is a small quarry with an active face approximately 5 m long and up to 1.5 m high (Plate 14). This feature also has two, crescentic dumps to the north (Plate 15) which are approximately 5 m long and up to 0.65 m high, probably representing both the clearing of the site prior to quarrying and the disposal of some of the waste product. It is possible that the probable track (Feature 11) relates to this quarry and was used to transport the products away. To the east of this obvious quarry a marked step of rock exposures was noted at SH 60244 38295 (Plate 16). This was approximately 0.30 m high and it appears to relate to a south facing break of slope leading to the west for a further 13.50 m. These features tend to suggest a level of informal quarrying in this southern sector of the development area.

The dominant feature of the western half of the development area, however, are a series of large terraces running approximately ENE – WSW across the site. The upper terrace is the most slight, being only about 0.20 m high with a relatedly flat area to its south. The middle terrace is by far the most dominant feature being approximately 20.0 m wide and 0.80 m high along its northern edge (Plate 17). This edge runs from near to Feature 11 for approximately 94.0 m before it turns to the south along the line of the old field boundary shown on the 1917 Ordnance Survey map (Figure 4).

The lower terrace is approximately 25.0 m wide with a drop of approximately 0.88 m along the northern edge. This northern edge is slightly disturbed in the area of the spread of building materials (Feature 6) which is probably related to the dumping of the materials within Feature 6. These three terraces are probably partly defined by the underlying geology, however the scale and definition of these features suggest that the natural landform has been enhanced. It also suggests that this area may have been used for arable agriculture in the past.

Excavation

Trench 1 (Figures 6 and 7)

Trench 1 was designed to sample one of the small hollows assumed to be the result of quarrying by the Gwynedd Archaeological Trust (Wilson Parry and Evans 2014, 13). A trench 3.85 x 5.90 m was laid out over the northern of the two hollows. A slot, approximately 1.4 m wide was excavated across the feature revealing the stratigraphical sequence and general form of the feature.

Although the original hollow appeared to be a roughly circular feature, approximately 0.35 m deep, the underlying feature clearly has both an irregular plan (Figure 6) and profile (Figure 7, Plate 18) which is defined by the underlying rock formations. It would appear that the quarry was designed to extract blocks of more slatey materials. Along the north-western side of the quarry these blocks would appear to

have been approximately 300 mm wide (Plate 19).

The quarry pit (Context 16) has a layer of crushed stone on its based (Context 20) which is probably the debris from the last activity in the pit. This layer has little or no matrix consisting solely of shaley rock fragments. This layer is sealed by a layer with a similar density of rock fragments, but with a yellow clay matrix (Context 19). It is thought that this layer is deliberately dumped into the feature and probably presents the dumping of the quarry waste back into the quarry pit on its abandonment.

Context 17 occupies the top of the feature and consists of a soily layer with relatively little rock content. The majority of the layer would appear to have naturally accumulated, however at the western edge of the feature there is a dump (Context 18) of material containing considerable quantities of ceramics, building materials and oyster shells.

Trench 2

Trench 2 was designed to sample the possible clearance cairn (Feature 9 *ibid* 18) recommended by the Gwynedd Archaeological trust. A trench 5.70 x 2.00 m was laid out as in Figure 5 to investigate the northern end of the mound.

The majority of the mound (Figure 8) consisted of a soily layer (Context 5) with the occasional large rounded boulder up to 0.55×0.35 m in size (Plate 20). This sits on the topsoil layer (Context 4) which can be traced beyond the extent of the mound. The only exception is a lens of yellow clay (Context 6) on the western side of the mound which appears to be a deliberate dump of material.

The stratigraphical relationship between the modern topsoil and the mound would suggest that this mound is probably relatively modern in date.

Trench 3

Trench 3 sampled the area of the building shown on the 1917 Ordnance Survey Map (Figure 3). A trench 14.75 x 2.00 m in size was laid out as in Figure 5.

The trench revealed the southern wall (Context 2) of the building (Context 9) (Figure 9, Plate 21) running along the line of the trench. Approximately7.00 m of wall was exposed within the trench which was 0.70 m wide. Only one course of stones survive over most of the length of the wall, however this reveals the structure used in the lower part of the foundations (Plate 22). Blocks of stone were place at right angles to the line of the wall to form a firm base for the rest of the structure. It is possible that two areas of stone (Contexts 7 and 8) extend to the north of the trench. Whilst these may be fragments of the floor of the building it is also likely that they represent dividing walls within the building. The gable wall at the eastern end of the building is not clearly defined, however there appears to have been some revetting along the eastern end of the building (Context 10) to retain the natural slope so that the building was slightly terraced in to the hillslope.

There is remarkably little building debris surrounding the remains with no scatter of roofing materials or building stone being recorded. It would therefore seem likely that the building was heavily robbed, or deliberately demolished, and the building materials removed from the immediate area of the building. The building was stilled roofed in 1971 based on aerial photographic evidence (Wilson Parry and Evans 2014, 8) so the demolition of this building must have taken place in recent times.

Only one area of contemporary deposits were recorded (Context 3). This was a thin lens of soily material which had accumulated below the possible revetting wall (Context 10). No finds were recovered to suggest a date for this layer.

Trench 4

Trench 4 investigated the spread of building debris (Feature 6). A trench, 20.10 x 2.00 m size, was excavated across the spread with a mechanical excavator revealing the modern date of this feature. The spread of building materials (Context 11) sealed the topsoil layer (Context 12) which extends beyond the extent of Context 11). It also sealed a cut feature (Context 13) (Plate 23) within the middle section of the trench. This feature was at least 4.0 m wide and at its eastern end more than 0.35 m deep. It also cuts Context 12 suggesting it may be relatively recent in date. The modern nature of Context 11 was demonstrated by the recovery of a corrugated iron sheet and plastic sheep netting from a depth of 0.8 m below the current ground level.

The spread of building material is clearly modern in date. It fills and extends beyond a cut feature which is possibly a farm quarry. One possibility is that Context 11 was deposited during the construction of the Snowdonia Business Park and includes the remains of the building in Tr 3(Context 9).

Trench 5

Trench 5 was designed to investigate the terracing in the western half of the development area. A trench 35.35×1.00 m in size was excavated across the lower terrace (Figure 5). This ran from the break of slope between the middle and lower terrace and the break of slope on the northern side of the lower terrace.

The profile of this trench (Figure 12) shows a relatively constant topsoil (Context 14) thickness of 0.2 m along most of the trench. However at the north western end of the trench this increases to 0.40 m where the topsoil was accumulating over the brow of the break of slope (Plate 24). No similar accumulation was noted at the south eastern end of the trench.

Finds

Only a limited number of finds were recovered from a limited number of contexts were recovered during the course of the evaluation. These are summarised below.

Trench 1

Context 18 contained 90 sherds of late nineteenth or early twentieth century ceramic vessels (M Jones *pers. comm.*) including sherds of black glazed wares (Buckley Ware), blue and white transfer printed wares, Liverpool cream wares and sponge decorated wares. There is also the base of a stoneware ink-well and an earthenware flower pot. There is also the remains of two glass bottles. One of these is the base of a typical beer bottle in a dark brown glass whilst the other has an elongated octagonal section and is in a pale green glass. Both of these are of moulded glass and are probably late nineteenth of early twentieth century in date.

Six fragments of ceramic building materials were also recovered representing fragments of both brick and ceramic floor tiles.

The deposit was notable for the number of oyster shells recovered. In all 52 oyster shells were found, with both top and bottom shells occurring. The shells were of moderate size with the top shells typically being 80 mm long and reaching a maximum length of 107 mm. These are presumably from a farmed source being fairly consistent in size and shape.

Trench 3

Only three sherds of black glazed ware (Buckley Ware) and five sherds of blue and white transfer printed wares were recovered during the topsoiling of this trench. These are probably nineteenth or early twentieth century in date. No finds were recovered from an undisturbed context.

Trench 5

A block of the local stone was recovered from the topsoil within Trench 5. It is $350 \times 150 \times 51$ mm in size and has a series of shallow grooves on its upper surface (Plate 25) which would suggest that the field has been ploughed at some date.

Conclusions

The evaluation at the proposed site of Ysgol Arbennig has largely recorded low levels of nineteen and twentieth century activity within the development area. Underlying the western half of the site were a series of at least three terraces which occupied the western field shown on the early Ordnance Survey maps of the area. Whilst these terraces are probably partly defined by the underlying geology they are clearly man made and probably record the use of arable agriculture in the area. The date of these is unknown, however they appear to pre-date the quarrying activity in the field and possibly the construction of the agricultural building (Context 9) on the western end of the middle terrace.

This building is recorded on the First Edition Ordnance Survey map and Wilson Parry and Evans (2014, 8) documents the presence of this building on an aerial photograph taken in 1971 where it still retained its roof. The building was clearly deliberately demolished, almost to footings level and the debris removed from the immediate area of the building. One possibility is that the debris from this building was deposited in the spread of building materials (Feature 6, Context 11). If so this took place in very recent times as shown by the incorporation of plastic sheep netting within Context 11. One possibility is that this work took time at a similar time to the construction of the Snowdonia Business Park.

The main activity within the development area in the past would appear to have been small scale quarrying. Not only are there the two small quarry pits located by the Gwynedd Archaeological Trust (ibid 13), but also two areas of informal quarrying and a small formal quarry on the site. It is likely that at least some of the products from these quarries were used to construct the dry-stone walls which mark the southern and eastern boundaries of the field, although the presence of the possible track (Feature 11) might suggest that at least some of the products were being removed from site. Wilson Parry and Evans (2014, 13) claim that the inmates of the Ffestiniog Union Workhouse, only 200 m to the north of the development area, were known to have quarried the land for stone. If so this would have taken place between the opening of the

workhouse in 1839 and its closure in the 1930's (http://www.workhouses. org.uk/Festiniog/). These dates would correspond with the material dumped into the top of the excavated quarry pit (Tr 1, Context 16)

Recommendations

Whilst only limited archaeologically significant deposits or feature were recorded in the evaluation there are a number of features which were not investigated. Also the evaluation only sampled approximately 0.6% of the development area leaving large areas where the archaeological potential is unknown. It is therefore recommended that a watching brief is carried out during the groundworks associated with the development.

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References

Ordnance Survey 1917 Merionethshire XI.13 map

Wilson Parry, L. and Evans, R. 2014 Snowdonia Business Park, Penrhyndeudraeth, Archaeological Assessment. GAT Report 1164

http://www.bgs.ac.uk

http://www.workhouses.org.uk/Festiniog/.



Plate 1: Track (Feature 1) looking NE



Plate 2: Edge of track (Feature 1) near to Feature 6



Plate 3: Eastern side of the gateway (Feature 3) and character of the stone wall (Feature 4)



Plate 4: Western side of the gateway (Feature 3) and character of the stone wall (Feature 4)



Plate 5: Location of the gateway (Feature 3)



Plate 6: Mound (Feature 9) before excavation



Plate 7: Spread of building debris (Feature 6), looking NW



Plate 8: Largest blocks within the spread of building debris



Plate 9: Large hollow slightly to the north of the building (Feature 5) shown on the 1917 Ordnance Survey Map



Plate 10: Linear feature (Feature 11)



Plate 11: Southern hollow (Feature 8)



Plate 12: Northern hollow (Feature 8)



Plate 13: Large area of informal quarrying



Plate 14: Quarry



Plate 15: One of the waste dumps to the north of the quarry



Plate 16: Rock step



Plate 17: Break of slope between the middle and lower terraces



Plate 18: Tr 1, Section across the quarry (Context 16)



Plate 19: Detail of the extraction technique used in the quarry (Context 16)



Plate 20: Tr 2, section through the mound



Plate 21: Tr 3, looking east



Plate 22: Tr 3, detail of the wall (Context 2) structure



Plate 23: Tr 4, Building debris (Context 11) and cut feature (Context 13)



Plate 24: Tr 5, north western end of the trench



Plate 25: Stone block from Tr 5 with possible plough marks



Figure 1: Location Scale 1:25,000

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Figure 3: Extract of the 1917 Ordnance Survey Map Merionethshire XI.13 Scale 1:2,500











Figure 6: Trench 1, plan Scale 1:50





Figure 7: Trench 1, sections Plan 1:20



Figure 8: Trench 2, section Scale 1:25



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Figure 9: Trench 3, plan Scale 1:60





Figure 11: Trench 5, profile Horizontal scale 1:50, Vertiacl scale 1:75

Appendix 1: Context Summary

Context	Type	Location	Relationships	Description
1	Layer	Tr3	Above 2, 3	Topsoil, organic rich soil with many roots
2	Wall	Tr3	Below 1 Abuts 3 Part of 9	The footings for a dry stone wall 7.20 m long and 0.70 m wide, constructed of local shaley stone blocks up to 500 x 200 mm in size. The wall tends to be better preserved toward the west where the stone blocks tend to form two parallel line at right angles to the line of the wall. Part of Building 9 forming its southern side. Only two courses survive in places. There is no sign of a scatter of building materials from within the trench suggesting the building may have been demolished and the material removed.
3	Layer	Tr3	Below 1 Abuts 2, 10	Soily material outside the building Only occurring at the eastern end of Building 9 and to the south of Wall 3. Very wet, orangish brown clayey silt with many small (up to 40 mm angular stone fragment and the occasional larger (up to 200 mm) angular stone fragment of the local slatey stone. There are also patches of iron panning within this layer particularly close to Wall 3. Possibly soil accumulation between Wall 3 and the possible revetting Wall 10.
4	Layer	Tr 2	Below 5, 6	Topsoil, greyish brown slightly clayey loam with few small stone (less than 50 mm) which tend to be at the base of the layer and are derived from the underlying sub-soil. Where this layer is not sealed by the mound (Context 5) there is some root disturbance from the bracken which was growing on the site
5	Layer	Tr 2	Above 4, 6	Large mound of material approximately 0.7 m high, 3.5 m wide and 4.2 m long. Whilst it contains some large, rounded boulders, up to 0.55 x 0.35 m in size, the majority of the mound is of mid brown, slightly clayey soil. There are some smaller stones within the layer which tend to be more angular, slatey pieces up to 0.20 m long, but once 200 - 400 mm thick. The pile of material as a whole is highly disturbed with bracken roots.

Context	Type	Location	Relationships	Description
6	Layer	Tr 2	Above 4 Below 5	A lens of yellow clayey, up to 0.16 m thick below the western side of the mound. Slightly mottled with bright yellow and grey patches, this layer appears to have been deliberately dumped before the pile of stones and soil (Context 5) was added to the location. Slightly disturbed by bracken root penetration from above.
7	Possible wall	Tr3	Below 1 Part of 9	A set of four stones extending beyond the northern side of the trench. They form a block 1.00 m wide and extend into the trench by 250 mm. Each of the stone blocks is up to 250 mm wide. They possibly mark the return for the western end of Building 9. Another possible interpretation is that they are the remnants of the floor within the building, however this seems less likely.
8	Possible wall	Tr 3	Below 1 Part of 9	Three stone slabs running at right angles to Wall 3, forming a possible wall 500 mm thick. The blocks extend beyond the northern edge of the trench with each block being up to 200 mm wide.
9	Building	Tr 3	Below 1 Includes 3, 7, 8	The southern side of a probable agricultural building shown as being roofed on the 1917 Ordnance Survey map. Set at right angles to the field boundary at the time the eastern gable end of the building Is slightly terraced into the hill slope. The gap between Walls 2 and 7 may mark the position of a small doorway, whilst possible wall 8 may mark the position of a dividing wall. The building appears to have been deliberately demolished and the material removed from site judging by the lack of stone observed during topsoiling
10	Possible retaining wall	Tr 3	Below1 Uncertain with 3	A line of stone block marking the edge of the undisturbed natural and the platform for Building 9. A line of stone blocks, each Up to 250 x 120 mm in size. The relationship between this possible wall and Wall 3 is uncertain.

Context	Type	Location	Relationships	Description
11	Layer	Tr 4	Above 12, 13	Spread of loosely packed stones with the occasional fragment of concrete. The layer contains squared boulders up to 1.10 x 1.10 x 0.50 m in size, however stones are more typically 0.40 x 0.25 x 0.15 m in size. A variety of lithologies are represented with the larger blocks being of a fine grained granite, whilst the majority of the smaller blocks are of a shaley material. There is very little matrix, although that which is evident is a yellowish brown slightly clayey loam, probably derived from the course turf growing on the spread. This layer is clearly very modern as a sheet of corrugated iron and some plastic sheep netting was observed at a depth of 0.80 m below the current ground level. Also the occasional sweet wrapper is incorporated within the layer. At the eastern end of the trench the layer is 0.40 m thick, however it extends down into a large feature (Context 13) and was excavated to a depth of 0.90 m below the current level. The layer thins again to the west becoming 0.3 m in depth
12	Layer	Tr 4	Below 11 Cut by 13	Topsoil. Mid yellowish brown clayey loam with some areas of grey mottling. The top of this layer has some root disturbance in areas where it is not sealed by Context 11.
13	Feature	Tr 4	Below 11 Cuts 12	Large feature at least 4.30 m wide with a near vertical side to the east and sloping edge to the west. Possibly a farm quarry. The feature is filled with the stone spread (Context 11) which also extends beyond the extent of the feature. Because of the unstable nature of Context 11 it was not possible to bottom this feature, also water filling the voids between the stones of Context 11 suggests the local water table is very close. The step excavated on the eastern side of the feature is 0.4 m high Cutting the topsoil suggesting this is a relatively modern feature

Context	Type	Location	Relationships	Description
14	Layer	Tr 5	Above natural	Topsoil. Yellowish brown clayey loam with angular fragments of the local shaley rock up to 30 mm in size. The layer is typically 200 mm thick, however at the northern end of the trench it reaches a depth of 300 mm, just below the northern crest of the middle terrace. The layer contained one slab of rock which appears to have plough marks on one surface.
15	Layer	Tr 1	Above 16, 17	Topsoil Organic rich slightly clayey loam with many roots. This layer is very thin being less than 75 mm in most places an where it covers the natural rock outcrops less than 50 mm.
16	Quarry	Tr 1	Below15 Contains 17, 18, 19, 20	An irregular shaped feature at least 3.00 x 3.50 m in size and up to 1.00 m deep. The southern side follows the natural faulting in the underlying rock with block being extracted in slabs approximately 300 mm wide. In the western side of the feature it would appear that the prime aim was for slatey blocks. The size of the quarry Is partly defined by less slatey Rock intrusions. It is clear the extent of the quarrying was larger than the original hollow observed and the feature probably relates to the large area of quarrying observed to the south. The form of the quarry is defined by the underlying rock formations
17	Layer	Tr 1	Above 19 Below 15 Abuts 18 Within 16	Yellowish brown clayey loam with the occasional stone slab up to 300 mm in size, but generally with a low density of small, sub- angular stone fragments. The layer is moderately disturbed by tree roots. Probably the natural accretion of soil within the hollow left by the extraction in the quarry.
18	Layer	Tr 1	Above 19 Below 15 Abuts 17 Within 16	Tip of cultural material in the western side of The quarry (context 16). A tip of angular stone fragments, up to 350 mm in size with very little matrix. The layer also contained A noticeable quantity of cultural materials including Buckley Ware, blue and white china, brick and tile fragments and oyster shells. A deliberate dump of material, probably to fill a hollow.

Context	Type	Location	Relationships	Description
19	Layer	Tr 1	Above 20 Below 17, 18 Within 16	A layer of shattered rock in a matrix of yellow clay. Angular stone shatter up to 250 mm long although only up to 50 mm wide and 20 mm thick. In general, however the shatter was less than 100 mm long. Probably the deliberate dumping of quarrying waste back into the hole on abandonment.
20	Layer	Tr 1	Below 19 Within 16	A layer of clean rock shatter lying on the base of the quarry and filling the angles between the rock outcrops. The shatter consists of angular stone fragments up to 250 mm long, although only 50 mm wide and up to 20 mm thick. More generally the fragments are less than 100 mm long. There is little or no matrix between these stones which probably represent quarrying waste left in the bottom of Context 16.

File Looking Scale Description Arbennig 001 SW Panorama from NE none Arbennig 002 SW Panorama from NE none Arbennig 003 S Panorama from north none Е Arbennig 004 Panorama from west none Arbennig 005 Е Panorama from west none Arbennig 006 Ν 2 m Stone spread Arbennig 007 Ν 2 m Stone spread N Arbennig 008 2 m Stone spread Arbennig 009 Е 2 m Stone spread Arbennig 010 Е 2 m Stone spread Arbennig 011 Е 2 m Stone spread Arbennig 013 Е Track leading to stone spread 2 m Arbennig 014 Е Track leading to stone spread 2 m Arbennig 015 E End of middle terrace 2 m Arbennig 016 S 2 m Track to gate in NW corner of site Arbennig 017 SE 2 m East side of gate in NW corner of site Arbennig 018 SW 2 m West side of gate in NW corner of site Arbennig 019 S 2 m Possible building site Arbennig 020 W Possible building site 2 m Arbennig 021 W 2 m Possible building site W Arbennig 022 2 m Possible building site 2 m Arbennig 023 Е Middle terrace Arbennig 024 Е Middle terrace 2 m Arbennig 025 Е 2 m Middle terrace Arbennig 026 Е Middle terrace 2 m Arbennig 027 Е 2 m Middle terrace NW Arbennig 028 2 m Possible cairn (site 9) Arbennig 029 NW 2 m Possible cairn (site 9) Arbennig 030 W 2 m Track from stone spread 6 Arbennig 031 SW Track from stone spread 6 2 m Arbennig 032 S 2 m Edge of track from stone spread 6 Arbennig 033 S Edge of track from stone spread 6 2 m Arbennig 034 NE 2 m Stone spread 6 Arbennig 035 NE 2 m Stone spread 6 Arbennig 036 NE 2 m Stone spread 6 Arbennig 037 S Hollow by Building 5 2 m Arbennig 038 SW Hollow by Building 5 2 m Arbennig 039 N Quarried rock face 2 m Arbennig 040 N 2 m Quarried rock face Quarry Arbennig 041 SW 2 m Arbennig 042 SW 2 m Quarry Arbennig 043 S 2 m Quarry Arbennig 044 SE 2 m Quarry Arbennig 045 Ν 2 m Quarry

Appendix 2: Photographic Index

2 m

Possible track (site 11)

Arbennig 046

Ν

File	Looking	Scale	Description
Arbennig_047	Ν	2 m	Possible track (site 11)
Arbennig_048	Ν	2 m	Possible track (site 11)
Arbennig_049	Ν	2 m	Possible track (site 11)
Arbennig_050	SE	2 m	Hollow, possible quarry pit 1
Arbennig_051	SE	2 m	Hollow, possible quarry pit 1
Arbennig_052	Е	1 m	Hollow, possible quarry pit 1
Arbennig_053	Е	1 m	Hollow, possible quarry pit 1
Arbennig_054	SW	1 m	Hollow, possible quarry pit 2
Arbennig_055	NW	2 m	Middle terrace looking NW
Arbennig_056	NW	2 m	Middle terrace looking NW
Arbennig_057	Е	2 m	Lower terrace
Arbennig 058	S	2 m	Slight mound, to west of stone spread 6
Arbennig 059	Е	2 m	Stone spread 6
Arbennig 060	Ν	1 m	Blocks in scatter 6
Arbennig 061	Ν	1 m	Blocks in scatter 6
Arbennig_062	Ν	2 m	Stone scatter 6
Arbennig 063	Ν	2 m	Stone scatter 6
Arbennig 064	Ν	2 m	Stone scatter 6
Arbennig 065	Ν	2 m	Stone scatter 6
Arbennig 066	Ν	2 m	Stone scatter 6
Arbennig 067	N	2 m	Stone scatter 6
Arbennig 068	S	2 m	Informal quarrying
Arbennig_069	S	2 m	Informal quarrying
Arbennig 070	S	2 m	Informal quarrying
Arbennig_071	S	2 m	Informal quarrying
Arbennig_072	SW	none	General view of Terrace 2
Arbennig_073	SW	none	General view of Terrace 2
Arbennig 074	Е	none	Trench 3, looking east after topsoiling
Arbennig_075	W	none	Trench 3, looking west after topsoiling
Arbennig_076	Е	none	Trench 3, western end of the trench after topsoiling
Arbennig_077	SW	none	Trench 2 after topsoiling
Arbennig 078	SW	none	Trench 2 after topsoiling
Arbennig 079	Е	none	Tr 4, looking east, after topsoiling
Arbennig_080	W	none	Eastern end of Tr 4 after topsoiling
Arbennig 081	W	none	Tr 4 after topsoiling, looking west
Arbennig 082	SW	none	Detail of mid-section of Tr 4, looking SW
Arbennig 083	N	none	Tr 5 after topsoiling looking north
Arbennig 084	Ν	none	Northern end of TR 5 after topsoiling
Arbennig 085	down	none	Plough damaged stone from Tr 5
Arbennig 086	S	none	Trench 5, looking south, after topsoiling
Arbennig 087	SE	none	Trench 1 after topsoiling
Arbennig 088	S	none	Trench 1 after topsoiling
Arbennig 089	NE	none	Trench 1 after topsoiling
Arbennig 090	N	none	Trench 1 after topsoiling
Arbennig 091	Е	1 m	Tr 3 looking east
Arbennig 092	Е	1 m	Tr 3 looking east
Arbennig_093	Е	1 m	Tr 3 looking east

File	Looking	Scale	Description
Arbennig 094	N	1 m	Detail of wall in Tr 3, looking north
Arbennig_094	Ν	1 m	Detail of wall in Tr 3, looking north
Arbennig_096	Ν	1 m	Detail of wall in Tr 3, looking north
Arbennig_097	W	1 m	Tr 3 looking west
Arbennig_098	W	1 m	Tr 3 looking west
Arbennig_099	S	1 m	Tr 2, looking south
Arbennig_100	S	1 m	Tr 2, looking south
Arbennig_101	SW	1 m	Tr 2, looking SW
Arbennig_102	SE	1 m	Tr 2, looking SE
Arbennig_103	W	1 m	Tr 4, looking west
Arbennig_104	W	1 m	Tr 4 looking west
Arbennig_105	NE	1 m	Tr 4, edge of possible quarry, looking NE
Arbennig_106	NE	1 m	Tr 4, edge of possible quarry, looking NE
Arbennig_107	Е	1 m	Tr 4, looking east
Arbennig_108	Е	1 m	Tr 4, looking east
Arbennig_109	Е	1 m	Tr 4, looking east
Arbennig_110	NE	1 m	Tr 4, edge of possible quarry, looking NE
Arbennig_111	NE	1 m	Tr 4, edge of possible quarry, looking NE
Arbennig_112	NE	1 m	Tr 4, edge of possible quarry, looking NE
Arbennig_113	NE	1 m	Tr 4, edge of possible quarry, looking NE
Arbennig_114	Е	1 m	Tr 4, looking east
Arbennig_115	Ν	1 m	Tr 5, looking north
Arbennig_116	Ν	1 m	Tr 5, looking north
Arbennig_117	S	1 m	Tr 5, southern end of trench looking south
Arbennig_118	Ν	1 m	Tr 5 middle of trench looking north
Arbennig_119	S	1 m	Tr 5, middle of trench, looking south
Arbennig_120	Е	1 m	Tr 5, northern end of trench looking east
Arbennig_121	NE	1 m	Tr 5, northern end of trench looking NE
Arbennig_122	Ν	1 m	Tr 1, Section across the quarry hollow
Arbennig_123	NNW	1 m	Tr 1, Section across the quarry hollow
Arbennig_124	WSW	1 m	Tr 1, detail of extraction process
Arbennig_125	WSW	1 m	Tr 1, detail of extraction process
Arbennig_126	W	1 m	Tr 1, detail of extraction process

Appendix 3: Specification

Specification for the Pre-construction Archaeological Investigation of Land Off The Snowdonia Industrial Estate, Penrhyndeudraeth, Gwynedd.

Planning Application: C14/0508/08/LL

Specification written by I.P. Brooks 24/11/14

National Grid Reference: 260244, 338330

1. Background

- 1.1. Gwynedd County Council intend to build a new school for pupils with special needs to serve the Meirion Dwyfor region of Gwynedd with associated respite accommodation and energy centre and associated car parking, landscaping and boundary works
- 1.2. The development site consist of a block of land to the south of the Snowdonia Business Park which is bounded to the north by a wetlands and the business park and to the south by agricultural land. There is a general north facing slope over the development are, however in the western half of the area this is developed into a series of marked terraces which are assumed to be of human origins. The land is under rough pasture bordered to the south by a belt of semi-mature and mature trees. There is also a small area of rough shrubby growth within the development area
- 1.3. .As part of the pre-determination process a Desktop Study and Walk-over survey was carried out by the Gwynedd Archaeological Trust. This revealed a number of discrete features which appear to relate to the post-medieval and modern use of the site. Eleven features were located and a series of archaeological responses were recommended. These varied from the basic recording of relatively modern linear features such as trackways and boundary walling to the detailed recording and evaluation of four features. These were the remains of two possible buildings, two possible quarry pits (in the north eastern corner of the site) and a possible clearance cairn. The desktop study also revealed the possibility of Bronze Age activity within the general region of the development and the potential for organic rich, wet deposits particularly immediately north of the proposed development. GAT also recommended a geophysical survey of the development area, however the results of this survey was inconclusive (J. Emmett *pers. comm.*)
- 1.4. The current works, therefore, are part of the archaeological mitigation before the construction of the new school.
- 1.5. A brief site visit on 14/11/14 suggest that there is significant terracing at the western end of the development site which was not recognized in the previous study.
- 1.6. This specification is based on:
 - 1.6.1.An email from Richard Farmer, Gwynedd County Council, dated 13/11/14
 - 1.6.2.A site visit made on 14/11/14
 - 1.6.3. The Gwynedd Archaeological Trust Report 1164

2. Aims

- 2.1. To evaluate archaeologically a number of feature located in the previous work by the Gwynedd Archaeological Trust.
- 2.2. These features include:

- 2.2.1.A trackway at the western end of the site (Feature 1)
- 2.2.2.A gateway in the southern boundary (Feature 3)
- 2.2.3.A dry stone wall along the southern and eastern boundary (Feature 4)
- 2.2.4. The possible remains of a building known to have existed prior to 1889 (Feature 5)
- 2.2.5.A possible stone built structure thought to date to after 1915 (Feature 6)
- 2.2.6.A trackway on top of a terrace (Feature 7)
- 2.2.7.Two small hollows thought to be possible quarry pits (Feature 8)
- 2.2.8.A possible Clearance Cairn (Feature 9)

3. Assessment program

- 3.1. The programme of works shall include:
 - 3.1.1.A detailed topographic survey of the features to define their extent and character
 - 3.1.2. The photographic recording of the features prior to disturbance
 - 3.1.3.A written description of the features before disturbance
 - 3.1.4. The excavation of five trenches to sample the archaeology of the possible buildings, hollows and possible quarry pits.
 - 3.1.4.1. The possible location of these trenches is shown in the attached plan
 - 3.1.5. Analysis and report preparation

4. Methodology

- 4.1. Topographic Survey
 - 4.1.1. Detailed topographic surveys of the features described in GAT Report 1164 will be undertaken with a Geodolite 506B Total Station. These will define the extent and form of the features prior to any disturbance.
- 4.2. Photographic Survey
 - 4.2.1.Photographs will be taken with a Nikon D80 Digital SLR Camera at a resolution of 10.2 MP
 - 4.2.1.1. The photographs will include metric scales where possible
 - 4.2.1.2. The photographs will be taken in .RAW format and will be converted to .JPG format for the report.
 - 4.2.2. The photographs will illustrate the form and condition of the features

4.3. Written description

- 4.3.1.A written description of the features will be made describing the extent, form, components etc. of each of the features described in the GAT Report 1164.
- 4.4. Evaluation Trenches
 - 4.4.1.Five evaluation trenches will be excavated to sample the two possible buildings, the quarry pits, the clearance cairn and one of the trackways (see attached plan)
 - 4.4.2. It is expected that the trenches across the buildings will each be 20 x 2 m in size

- 4.4.3.The trench across the possible quarry pits is expected to be at least 12 x 4 m in size
- 4.4.4. The trench through the clearance cairn is expected to be 10 x 2 m in size
- 4.4.5. The trench through the trackway is expected to be 10 x 2 m in size
- 4.4.6. The topsoil and any archaeologically inert deposits will be removed with a back acting mechanical excavator with a smooth faced bucket

4.4.6.1. It is intended to commission Xtreme Track to carry out the topsoiling.

- 4.4.7. Any subsequent work will be carried out by hand.
- 4.4.8.All features or archaeologically significant deposits revealed by the ground works will be fully recorded including:
- 4.4.9.A written description of deposit: type, components etc.
- 4.4.10. Drawn plans and elevations at suitable scales
- 4.4.11. Photographs will be taken with a Nikon D80 Digital SLR Camera at a resolution of 10.2 MP
- 4.4.12. The photographs will be taken in .RAW format and will be converted to .JPG format for the report
- 4.4.13. The photographs will include metric scales
- 4.4.14. All artefacts and ecofacts will be recorded by context.
- 4.4.15. Each deposit, feature or layer will be identified by a unique context number to which all other records will be related
- 4.4.16. Plan drawing showing extent of deposit.
- 4.4.17. Elevation drawing of any feature recorded to record vertical stratigraphy.
- 4.4.18. Where possible, features will be sampled to obtain dating and functional evidence.
- 4.4.19. Where possible, elevation drawings of feature half sections to record vertical stratigraphy.
- 4.4.20. At least 50% of the features and layers exposed by the trenching will be sampled.
- 4.4.21. Where appropriate, deposits will be sampled for environmental, dating or technological evidence. Samples will be fully recorded and packed appropriately for future analysis.
- 4.4.22. Sampling will be carried out in accordance with the procedures outlined in English Heritage. 2011. Environmental Archaeology. *A guide to the theory and practice of methods, from sampling and recovery to post-excavation.*
- 4.4.23. All features recorded will be tied in to the National Grid.
- 4.4.24. All features revealed by the ground works will be recorded as above if safe working practices and the work programme allows.
- 4.4.25. If human remains are encountered all works will stop until the appropriate permissions have been obtained.

4.6. Finds

- 4.6.1. Any flint artefacts will be studied by I.P. Brooks for Engineering Archaeological Services Ltd.
- 4.6.2. Any pottery will be studied by an appropriate specialist to be agreed in consultation with the Gwynedd Archaeological Planning Service
- 4.6.3. Any metal or other special finds will be studied by an appropriate specialist to be agreed in consultation with the Gwynedd Archaeological Planning Service
- 4.6.4.All ceramic, bone and stone artefacts will be cleaned and processed immediately following the excvaation.
- 4.6.5.Metal artefacts will be stored and managed on site according to the UK Institute of Conservation Guidelines.
- 4.6.6. Any samples taken for environmental analysis will be assessed and studied by an appropriate specialist to be agreed in consultation with the Gwynedd Archaeological Planning Service
- 4.6.7.If specialist reports are required these will not be commissioned without the express permission of Gwynedd County Council.

5. Reporting

- 5.1. A summary report on the findings of the investigations will be prepared and completed within one month from completion of the project. This will summarise the results of the project including;
 - 5.1.1. The results of the topographic survey
 - 5.1.2. Results of the basic recording of Feature 1, 3 and 4.
 - 5.1.3. Results of the trenching of Features 5, 6, 7, 8, and 9
 - 5.1.4.A location plan at a suitable scale
 - 5.1.5.Copies of reports will be sent to the client, the Gwynedd Archaeological Planning Service and the Gwynedd Historical Environment Record
 - 5.1.6.Up to five hard copies of the report will be produced together with a digital copy in.PDF format

6. General

- 6.1. IFA Code of Conduct
 - 6.1.1.All staff will abide by, and all procedures be carried out in accordance with the Institute of Field Archaeologists' Code of Conduct.
- 6.2. Health and Safety
 - 6.2.1.EAS Ltd adopt and adhere to safe working practices at all times. A copy of the company's general statement of policy is available on request.
 - 6.2.2.A risk assessment will be carried out prior to any fieldwork

- 6.4. Staff
 - 6.4.1. The project will be directed by Dr I.P. Brooks MIfA
 - 6.4.2. Project Staff will include Dr I.P. Brooks MIfA
- 6.5. Timetable
 - 6.5.1. Topographic Surveys: 2 man days (2 people for 1 day).
 - 6.5.2.Photographic Recording: 1/2 man days
 - 6.5.3. Written Description: ¹/₂ man days
 - 6.5.4. Topsoiling trenches: 2 man day
 - 6.5.5.Excavation of trenches: 7 man days
 - 6.5.6. Analysis and report preparation: 3 man days (this is partly dependent on the results of the excavations).
 - 6.5.7.If appointed it is intended to carry out this work in December 2014

6.6. Insurance

- 6.6.1.EAS Ltd carries all necessary Public and Employee Liability Insurances.
- 6.6.2. EAS Ltd carries Professional Indemnity Insurance.
- 6.7. Copyright
 - 6.7.1. EAS Ltd shall retain full copyright of any commissioned reports, tender documents or other project documentation, under the Copyrights, Designs and Patents Act 1988 with all rights reserved: excepting that it hereby provides an exclusive license to the client for the use of such documents by the client in all matters directly relating to the project as described in the Project Specification.
 - 6.7.2. EAS Ltd is prepared to assign copyright at the request of the client