



Archaeoleg Brython Archaeology

Segontium Pods, Caernarfon  
Heritage Impact Assessment

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**Segontium Pods  
Caernarfon**

Heritage Impact Assessment

Prepared for YGC

by Iwan G. Parry

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## Appendix I: Client Drawings, site layout and cross sections



## Crynodeb

*Comisynwyd Archaeoleg Brython i gynnal Asesiad o'r Effaith ar Dreftadaeth ar gyfer datblygiad arfaethedig o bedwar uned hunangynhaliol ddomestig ar gyn-safle Ysgol Pendalar, Caernarfon. Mae'r safle yn gyfagos a chaer Rufeinig Segontium sydd yn heneb restredig ac yn safle pwysig yn natblygiad hanesyddol Caernarfon.*

*Mewn ymgynghoriad â Cadw a Gwasanaeth Cynllunio Archaeolegol Gwynedd nodwyd bod effaith ar olygfeydd rhwng Segontium, Safle amddiffynnol Twthill a Chastell Caernarfon, sy'n rhan o Safle Treftadaeth y Byd, angen eu cysidro yn yr asesiad. Yn ystod gwerthusiad archaeolegol o'r safle danrganfyddwyd ddyddodion Rhufeinig o'r ganrif gyntaf a'r ail sy'n debygol o fod yn gysylltiedig â sefydliad a hanes cynnar y gaer.*

*Mae'r asesiad yn dangos bod effaith y datblygiad arfaethedig ar olygfeydd rhwng Segontium a'r safleoedd nodedig ddim yn sylweddol ond bydd yn cael effaith negyddol cymedrol i fawr ar yr archaeoleg sydd wedi ei gladdu. Bu'r datblygiad arfaethedig yn cael effaith minor ar leoliad heneb restredig Segontium.*

*Argymhellir unai cloddiad archaeolegol o'r safle cyn cychwyn gwaith adeiladu, neu codi lefel y datblygiad i leihau'r effaith ar yr archaeoleg. Yn ystod yr asesiad mae cynlluniau'r datblygiad wedi eu haddasu er mwyn codi lefel y datblygiad. Bu'r naill mesuriad lleddfu yma yn gostwng arwyddocâd yr effaith i lefel Isel (Slight).*

*Gall codi ymwybyddiaeth o'r safle a gwella dehongliad gan ddefnyddio canlyniadau'r gwaith lleddfu wella dealltwriaeth a gwerthfawrogiad o'r safle ymysg y gymuned leol. Bu hyn yn gwrthbwysu'r effaith ar leoliad heneb restredig Segontium.*

## Summary

*Brython Archaeology have been commissioned to undertake a Heritage Impact Assessment for a proposed development of four self-contained housing units on the former site of Ysgol Pendalar, Caernarfon. The site is adjacent to Segontium Roman fort which is a Scheduled Ancient Monument and an important site in the historical development of Caernarfon.*

*In consultation with Cadw and Gwynedd Archaeological Planning Service it was noted that the impact on views between Segontium, Twthill Defended Enclosure and Caernarfon Castle, which forms part of a World Heritage Site, needed to be considered during the assessment. During archaeological evaluation Roman deposits from the 1<sup>st</sup> and 2<sup>nd</sup> centuries, likely to be associated with the establishment and early history of the fort.*

*The assessment shows that the proposed development's impact on views between Segontium and the notable sites would not be significant but there would be a moderate to major impact on buried archaeology. The proposed development would have a minor impact on the setting of Segontium Scheduled Ancient Monument.*

*It is recommended that either an archaeological excavation of the site is undertaken prior to construction, or the level of the development is raised to mitigate the negative impact. During the assessment the design has been amended to raise the level of the development. Both methods of mitigation would reduce the significance of the impact to Slight.*

*Raising awareness of the site and improving interpretation by utilising the results of the mitigation works could improve understanding and appreciation of the site among the local community. This would offset the impact on the setting of Segontium Scheduled Ancient Monument.*

# 1 Introduction

Archaeoleg Brython Archaeology CYF was commissioned by Ymgynghoriaeth Gwynedd Consultancy (YGC) to undertake a programme of archaeological fieldwork and assessment to inform the planning application for the development of four self-contained housing units on the former site of Ysgol Pendalar, Caernarfon, at NGR SH48516256 (See Figure 1). The proposed site is adjacent to Segontium Roman Fort which is a Scheduled Ancient Monument (SAM, CN006).

The fieldwork phases of the works comprised an archaeological watching brief during the excavation of Geological Inspection (GI) pits and archaeological evaluation trenching of the proposed development area. These works were completed in February 2019 and identified the presence of significant Roman deposits associated with the earlier phases of Segontium.

This document is a Heritage Impact Assessment for the proposed development which considers the results of a limited Desk Based Assessment and both phases of archaeological fieldwork.

All works were undertaken to meet the relevant standards of the Chartered Institute for Archaeologists, this Heritage Impact Assessment has been completed in line with the advice provided in Cadw's *Heritage Impact Assessment in Wales* (2017). All works have been monitored and approved by Cadw and Gwynedd Archaeological Planning Service (GAPS).







## 2 Background

### 2.1 Project Background

The proposed development site lies immediately adjacent to the north-western corner of Segontium Roman Fort. The site was formally the location of Ysgol Pendalar school which was demolished in 2007. Since the demolition of the school the site has remained undeveloped and is generally overgrown, it has also been suggested that in its current state the site has attracted some degree of antisocial behaviour.

The former school building was constructed in the mid-20th century and was not believed to have substantial foundations, however it was believed that significant disturbance may have been caused during the preparation of the site for construction. Demolition documents obtained by YGC indicated the presence of a small, 1.2m deep, swimming pool within the school building. Following a conversation with a former teacher at the school it has been confirmed that the pool was located towards the north eastern end of the school building and is likely to be within the development area.

During a site meeting with YGC, Cadw, GAPS and Brython Archaeology the main areas of concern regarding the development were raised by Cadw and GAPS. Given the importance of Segontium in the historical development of Caernarfon, the main areas of consideration in terms of the potential impact of the development was its visual impact on views to and from other important monuments in the landscape. The monuments highlighted were Caernarfon Castle (CN079), Twthill Defensive Enclosure (PRN 3091) and the lower Roman fort at Hen Waliau (CN094).

The proposed development consists of four self-contained residential units or 'pods' which would be largely pre-fabricated prior to installation at the site. The structures are lightweight, are approximately 4.5m in height and are expected to have a lifespan of 60 years.

The identification of significant archaeological deposits during the archaeological evaluation led to several re-designs of the development which reduced the footprint and raised the overall construction level to potentially reduce the impact on buried archaeology. The new design would reduce the impact on buried archaeology but would not remove it, raising the levels further would likely increase the impact on the setting of Segontium and would hinder disabled access. Impact to buried archaeology within the proposed development boundary has been considered in this assessment.

### 2.2 Archaeological and Historical Background

#### 2.2.1 Prehistoric

Evidence of Prehistoric activity in the vicinity of the proposed development area is largely represented by artefacts. The earliest activity dates to the Neolithic and includes three stone axes (PRN 3110) which are recorded as being discovered at Segontium. A pit (PRN 34067) excavated during mitigation at the site of Ysgol yr Hendre which produced flint debitage and pottery was also radiocarbon dated to 2560-2350BC indicating activity during the Mid to Late Neolithic.

Possible Prehistoric activity (PRN 68745), which may have been associated with a roundhouse, was also found during archaeological evaluation to the south-east of the former Ysgol yr Hendre.

In the wider landscape it is believed that Twthill, which lies approximately 550m to the north-west, is the location of a Prehistoric defended enclosure. This interpretation has been widely debated but given the presence of a large bank it is likely that the site was defended at some point in time (Smith, 2005).

### 2.2.2 Roman

Unsurprisingly given the close proximity to Segontium itself much of the recorded archaeology in the area dates to the Roman period.

Segontium was probably established as an auxiliary fort in AD77 by Gnaeus Iulius Agricola following the suppression of a rebellion by the Ordovices. The fort was continuously occupied to varying degrees until the late 4<sup>th</sup> century, developing over time with numerous phases of demolition and construction. The fort is thought to have been abandoned at the end of the 4<sup>th</sup> century.

Activity likely to be associated with the establishment of the fort was identified during archaeological excavations in advance of the construction of the new Ysgol yr Hendre approximately 500m to the east. A number of earth-cut ovens were dated to the 1<sup>st</sup> century AD with Bayesian analysis suggesting that they were likely to be associated with the initial establishment of Segontium (Kenney & Parry, 2013).

A vicus, or civilian settlement, is known to have developed around the fort during the 1<sup>st</sup> and 2<sup>nd</sup> centuries but evidence of continuation beyond this is limited. Evidence of the vicus has been found to the north-west, west and south of the fort (Hopewell, 2003). Given that the proposed development area is to the north-west of the fort it is possible that activity associated with the vicus could be present. At the north-east boundary of the proposed development area a Roman drain (PRN 16066) was identified during the construction of houses on Pendalar and the wall at the rear of the properties on Caer Saint. The drain was identified following the excavation of the foundation trench for the wall and was orientated south-west to north-east. It was suggested that the drain originated at a point below the former school, likely to be within the proposed development area (Banholzer, 2002).

Further sites which are associated with the fort include the lower fort or Hen Waliau which is located approximately 300m to the south-west. It has been suggested that this was a storage depot which was built in the 4<sup>th</sup> century (Kenney & Parry, 2013). A Mithraeum (PRN 3098) dating to the early 3<sup>rd</sup> century was excavated in 1959 approximately 270m south-east of the proposed development, the site is now occupied by No. 14 Lôn Arfon.

A number of cemeteries and individual burials have been discovered around the fort suggesting that numerous locations were utilised for funerary practices during the occupation of the fort. Discoveries made to date suggest that the main burial ground (PRN 3092) was on the road from Segontium to Tomen y Mur, approximately 450m south-east of the proposed development. A total of 14 cremations were discovered during the cutting of graves at the Llanbeblig cemetery between 1850 and 1947, all of which appear to have been located on the southern side of the road. A single cremation (PRN 5558) dating to around 100AD was discovered during the excavations of foundations for houses on Ffordd Ysgubor Goch, 120m to the north. The burial of a mature woman is noted as having been discovered at the base of a re-cut ditch approximately 300m to the west, and burials are also mentioned as being discovered to the east on the road to Canovium (Pollock, 2006).

### 2.2.3 Early Medieval

Evidence of early medieval activity in the area was identified during archaeological excavations in advance of the construction of Ysgol yr Hendre in 2010. During the excavation an early medieval cemetery (PRN 34043) containing three square funerary enclosures around which an unenclosed cemetery, comprising 41 graves, had developed (Kenney & Parry, 2013). A further three square funerary enclosures (PRN 34045, 34046, 34047) were discovered to the north of the cemetery around which no further graves were identified. The enclosures were to between the mid 6<sup>th</sup> and late 7<sup>th</sup> centuries which clearly indicated activity in the area during this period. Given the size of the

cemetery it is likely that a settlement was located nearby, evidence for which has not been discovered to date.

#### 2.2.4 Medieval

Evidence of medieval activity within the study area is limited and may be related to the shift in focus to the banks of the Seiont which occurs with the establishment of the Welsh town. The main feature within the study area is the church of St Peblig (PRN 3108) which is a Grade I Listed Building (ID 3881). The current building is 14<sup>th</sup> century or later with much of the building dating to the late 16<sup>th</sup> and 18<sup>th</sup> centuries. The dedication of the site to St Peblig, who is said to have been the son of Macsen Wledig (Magnus Maximus), suggests that the site was of importance during the early Christian period. The church was given to Aberconwy Abbey in the 13<sup>th</sup> century by Llywelyn ap Gruffydd but no evidence of this earlier building has been identified.

Although it is likely that an earlier motte and bailey castle once stood on the site, Caernarfon castle and the town wall was constructed following the conquest of Edward I in 1283. The Welsh town was replaced by an English garrison borough and castle (Kenney & Hopewell, 2009). The castle was built by Master James of St George with work starting in 1287 and continuing for approximately three years.

Approximately 450m south-west of the proposed development area are two medieval sites associated with St Helen. Capel Helen (PRN 3120) is referred to in an itinerary of John Ray dating to 1662. In the document Ray states that the remains of the chapel could formerly be seen close to Ffynnon Helen (PRN 3119), a holy well which is located in a private garden on South Road.

#### 2.2.5 Post Medieval and Modern

During the post-medieval period Caernarfon grew and spread towards Segontium. The 1<sup>st</sup> edition map of 1899 shows that town was encroaching on the north-western side of the fort but the proposed development area itself and the land to the north and east remained as enclosed fields. The majority of the housing estates which now surround the area were built in the mid 20<sup>th</sup> century which is also when Pendalar School was built on the site.

### 2.3 Geology

Segontium is located on a high plateau which slopes away on all sides, most notably to the north-west where it overlooks the medieval walled town of Caernarfon and the Menai Strait beyond. Approximately 150m west is the lower fort, known as Hen Waliau, which is likely to have formed part of the Segontium fort complex providing access to Afon Seiont.

The BGS Geology of Britain Viewers states that the superficial geology consists of Devensian-Diamicton Till which formed up to two million years ago in the Quaternary period, indicating a landscape dominated by ice age conditions. The underlying bedrock consists of siltstone of the Nant Ffrancon subgroup, a sedimentary rock which formed in shallow seas approximately 449-478 million years ago during the Ordovician period (BSG, 2019).

## 3 Methodology

### 3.1 Baseline Assessment

As Cadw and GAPS had stated during consultation that their main areas of concern regarding the proposed development were in relation to potential visual impact to and from Segontium, Caernarfon Castle and Town Walls, and Twthill the assessment will focus on these sites.

A search of the Gwynedd HER was undertaken to ensure that no other Heritage Assets which may be impacted were overlooked in the assessment and to establish any potential relationships with the features identified during fieldwork. A search was undertaken of all designated assets within a 1km buffer of the proposed development boundary and all recorded assets within a 500m buffer (See Figure 2). The archaeology identified during the fieldwork phases of the project has also been considered during the assessment.

### 3.2 Impact Assessment

The impact assessment was undertaken in line with the guidelines presented in *Heritage Impact Assessment in Wales* (Cadw, 2017) and, given that Caernarfon Castle and Town Wall forms part of a World Heritage site, the guidelines of the International Council on Monuments and Sites (ICOMOS).

The following criteria were used in informing the assessment.

Table 1: Criteria for assessing the value of heritage assets

Value	Definition
Very High (International)	<ul style="list-style-type: none"><li>World Heritage Sites (<i>including nominated sites</i>)</li><li>Assets acknowledged of having international importance</li><li>Assets that can contribute significantly to acknowledged international research objectives</li></ul>
High (National)	<ul style="list-style-type: none"><li>Scheduled Ancient Monuments (SAM) (<i>including proposed sites</i>)</li><li>Grade I and Grade II* Listed Buildings (<i>including proposed sites</i>)</li><li>Unscheduled sites which are of schedulable importance or quality</li><li>Unlisted buildings and some Grade II Listed Buildings which are of a standard or importance to warrant listing at Grade I or Grade II*</li><li>Historic Landscapes of outstanding interest (<i>including designated and undesignated</i>)</li></ul>
Medium (Regional)	<ul style="list-style-type: none"><li>Grade II Listed Buildings (<i>including proposed sites</i>)</li><li>Archaeological sites which are not schedulable but are of regional importance</li><li>Buildings which fulfil the criteria for listing at Grade II</li><li>Designated special historic landscapes or those worthy of designation</li></ul>
Low (Local)	<ul style="list-style-type: none"><li>Components of the historic environment which help define local distinctiveness and character (<i>including features such as walls, gateposts, tracks etc.</i>)</li><li>'Locally Listed' buildings</li><li>Historic (unlisted) buildings of modest quality or historic association</li><li>Historic landscapes of local interest</li></ul>
Negligible	<ul style="list-style-type: none"><li>Sites of minor importance</li></ul>

	<ul style="list-style-type: none"> <li>Sites which have been so badly damaged that not enough remains to justify their inclusion in a higher category</li> <li>Buildings of no architectural or historical note or buildings of an intrusive character</li> <li>Landscapes with little or no significant historic interest</li> </ul>
Unknown	<ul style="list-style-type: none"> <li>Sites or features whose character, importance or location is undetermined</li> <li>Includes unevaluated buried archaeology</li> <li>Sites in this category will be allocated a value category from Very High to Negligible following evaluation</li> </ul>

Table 2: Criteria for the assessment of magnitude of impact

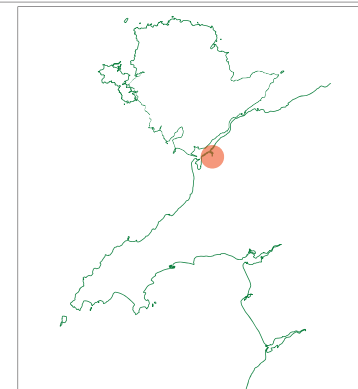
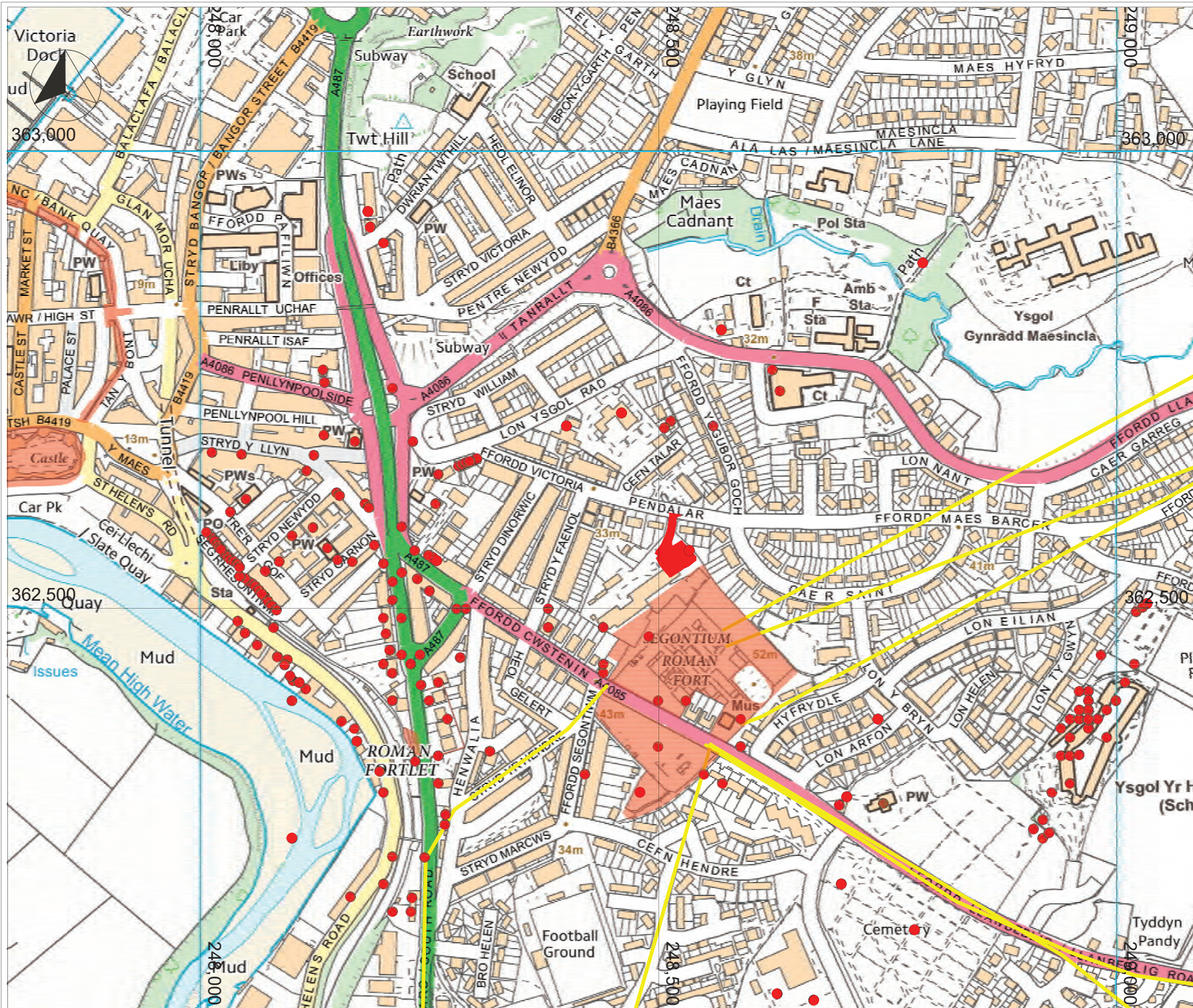
Magnitude	Definition
Major	<ul style="list-style-type: none"> <li>Change to most or all of the key archaeological materials or historical building elements such as the resource is totally altered</li> <li>Comprehensive changes to setting</li> <li><b>For Historic Landscapes:</b> Changes to most or all key historic landscape elements, parcels or components; extreme visual effects; gross change of noise or change to sound quality; fundamental changes to use or access; resulting in total change to historic landscape character unit</li> </ul>
Moderate	<ul style="list-style-type: none"> <li>Changes to many key archaeological materials or historic building elements, such as the resource is clearly modified</li> <li>Considerable changes to the setting that affect the character of the asset</li> <li><b>For Historic Landscapes:</b> Changes to many key historic landscape elements, parcels or components, visual change to many key aspects of the historic landscape, noticeable differences in noise or sound quality, considerable changes to use or access; resulting in moderate changes to historic landscape character</li> </ul>
Minor	<ul style="list-style-type: none"> <li>Changes to key archaeological materials or historic building elements, such as the asset is slightly altered</li> <li>Slight changes to setting</li> <li><b>For Historic Landscapes:</b> Changes to few key historic landscape elements, parcels or components, slight visual changes to few key aspects of historic landscape, limited changes to noise levels or sound quality; slight changes to use or access: resulting in limited changes to historic landscape character</li> </ul>
Negligible	<ul style="list-style-type: none"> <li>Minor changes to archaeological materials, historic building elements or setting</li> <li><b>For Historic Landscapes:</b> Very minor changes to key historic landscape elements, parcels or components, virtually unchanged visual effects, very slight changes in noise levels or sound quality; very slight changes to use or access; resulting in a very small change to historic landscape character</li> </ul>
No Change	<ul style="list-style-type: none"> <li>No change</li> </ul>
	<ul style="list-style-type: none"> <li></li> </ul>



Table 3: Aid to calculating significance of impact

Magnitude of Impact	Heritage Asset Value				
	Negligible	Low (Local)	Medium (Regional)	High (National)	Very High (International)
<b>Major Change</b>	<i>Slight</i>	<i>Slight/ Moderate</i>	<i>Moderate/ Large</i>	<i>Large/ Very Large</i>	<i>Very Large</i>
<b>Moderate Change</b>	<i>Neutral/ Slight</i>	<i>Slight</i>	<i>Moderate</i>	<i>Moderate/ Large</i>	<i>Large/ Very Large</i>
<b>Minor Change</b>	<i>Neutral/ Slight</i>	<i>Neutral/ Slight</i>	<i>Slight</i>	<i>Moderate/ Slight</i>	<i>Moderate/ Large</i>
<b>Negligible Change</b>	<i>Neutral</i>	<i>Neutral/ Slight</i>	<i>Neutral/ Slight</i>	<i>Slight</i>	<i>Slight</i>
<b>No Change</b>	<i>Neutral</i>	<i>Neutral</i>	<i>Neutral</i>	<i>Neutral</i>	<i>Neutral</i>





**Figure 2:**  
Identified Assets 500m

**Key**

- Proposed Development Area
- Scheduled Ancient Monument
- Identified Asset (HER)
- Roman Roads (HER)

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Drawn By:

IGP

Date:

26/06/19

Location:

SH48516256

Project:

AB1809 Segontium Pods



## 4 Baseline Assessment

A search of the Gwynedd HER has identified the presence of 195 Heritage Assets within 500m of the proposed development boundary. Of these 66 are stated as dating to the medieval period or earlier. Given the scale and location of the proposed development there will be no significant impact on post-medieval and modern assets, as such they have been scoped out of the assessment. The four Scheduled Ancient Monuments highlighted by GAPS and Cadw as being of concern are all within the 1km buffer.

### 4.1 Non-designated Assets

Consideration of the remaining assets dating to the medieval period or earlier was based on their proximity to the development, risk of direct physical impact and risk of impact to setting. As a result only one asset, a Roman drain (PRN 16066), which is recorded as being within the proposed development boundary was assessed as potentially being impacted by the development.

In the wider landscape the defended enclosure at Twthill (PRN 3091), which was identified by Cadw and GAPS as having significance in relation to Segontium, is a non-designated asset which will be also be considered in the assessment.

The features and deposits identified during the archaeological evaluation of the site and other potential buried archaeology will also be considered as non-designated assets during the assessment.

### 4.2 Designated Assets

Four Scheduled Ancient Monuments have been identified within 1km of the proposed development boundary, these are:

ID	Name	NGR
CN079	Caernarfon Castle	SH4778762663
CN094	Lower Roman Fort (Hen Waliau)	SH4824462362
CN034	Caernarfon Town Wall	SH4784662844
CN006	Segontium Roman Site	SH4852862420

For the purposes of the assessment Caernarfon Castle and Caernarfon Town Wall will be considered as a single asset.

Within 500m of the proposed development boundary there are 73 Listed Buildings, of these 72 are Grade II and one is Grade I. The Grade I Listed Building is the medieval Church of St Peblig (ID 3881) which is located approximately 340m south-east of the proposed development boundary at SH4875062290. The development would have no impact on any of the identified Listed Buildings, as such they will be scoped out of the assessment.







## 5 Impact Assessment

*See Figure 3*

### 5.1 Segontium Roman Fort

**PRN:** 3089

**NGR:** SH4852862420

**Designation:** Scheduled Ancient Monument – CN006

The proposed development is located approximately 6.5m from the north-western corner of the scheduled area. The ground level within the fort is significantly higher than the proposed development area which will result in the units being clearly visible to anyone standing at the north-western edge of the fort.

The fort has been surrounded by development during the late 19<sup>th</sup> and early to mid 20<sup>th</sup> centuries which does have an impact on its setting and the ability to appreciate its original setting. Originally it is likely there would have been largely uninterrupted views to the lower fort at Hen Waliau and the mouth of the Seiont which is now occupied by the Medieval and later town. From the interior of the fort its setting in the landscape, with long reaching views over Caernarfon and Anglesey, can be appreciated and understood in a defensive context.

It is likely that the vicus on the western side of the fort, possibly including the proposed development area, largely comprised of relatively low buildings; however, the limited excavations undertaken to date cannot confirm this. The current state of the proposed development area is not beneficial to the setting of the fort and does not aid understanding or appreciation of its original setting. The relatively small footprint and low height of the proposed development, along with its location at the exterior north-western corner of the fort, is unlikely to significantly increase the perception of encroachment by modern development on the fort.

The greatest impact to the significant views highlighted by Cadw and GAPS results from the 19<sup>th</sup> century terraces which are significantly taller than any of the later developments with the exception of a communications tower (See Plate 1).

Given the current condition of the former school site the inclusion of the units in these views will not be detrimental to the perceived setting of the fort.

The location of the development means that it would have no impact on intervisibility between Segontium and Caernarfon Castle and is unlikely to be visible from the towers of the castle.

The development would be in the foreground of views towards Twthill but will have no impact on intervisibility, the development would be visible from the summit of Twthill but would not have an impact on intervisibility (See Plate 2).

The development would not have a physical impact on the scheduled area but as discussed in Para. 5.6 it could have an impact on associated archaeology. The development would have a minor impact on the setting of Segontium.



Plate 1: View of Caernarfon Castle and Twthill from interior north-western edge of Segontium. Approximate location of proposed development shaded red.



Plate 2: View of Twthill from interior north-western edge of Segontium. Approximate location of proposed development shaded red.



## 5.2 Caernarfon Castle and Town Wall

**PRN:** 3095

**NGR:** SH4778762663

**Designation:** Scheduled Ancient Monument – CN079/CN034, Listed Building GI – ID3814, World Heritage Site – Ref.374

The proposed development is located approximately 650m east of the castle at an elevation which is approximately 10m higher than the North-East Tower and approximately 12m higher than the Black Tower which are the main points from which the development could be visible. The development would be at approximately the same elevation as the highest point of the castle which are the towerettes atop the Eagle Tower, however the 19<sup>th</sup> century terraces on Vaynol Street are of a greater height and would obstruct views of the development (Heights Obtained from NRW LiDAR data).

The view from the highest accessible point of the Black Tower demonstrates that the proposed development is unlikely to be visible and would not impact intervisibility between the Castle and Segontium (See Plate 3).



Plate 3: View of Segontium from the Black Tower of Caernarfon Castle, proposed development location shown by small arrow.

The view from the highest accessible point of the North-East Tower demonstrates that the proposed development is unlikely to be visible and would not impact intervisibility between the Castle and Segontium (See Plate 4).



Plate 3: View of Segontium from the North-West Tower of Caernarfon Castle, proposed development location shown by small arrow.

The proposed development would not be within the Essential Setting of the World Heritage Site and it would not be visible in any of the Significant Views.

### 5.3 Lower Roman Fort (Hen Waliau)

**PRN:** 3090

**NGR:** SH4824462362

**Designation:** Scheduled Ancient Monument – CN094

Due to 19<sup>th</sup> and 20<sup>th</sup> century housing developments there is no intervisibility between Hen Waliau and Segontium, as such the proposed development would have no visual impact on the monument.

The location of the proposed development at the outer north-western corner of Segontium also means that it is unlikely to have any physical impact relating to Hen Waliau given that it is located approximately 300m to the south-east.

### 5.4 Twthill Defended Enclosure

**PRN:** 3091

**NGR:** SH4824462362

**Designation:** None

The defensive bank associated with the enclosure at Twthill is located within the grounds of Ysgol Santes Helen which is on a lower plateau which is overlooked by the summit of the hill to the west. The proposed development would not be visible from this lower ground but as the summit is likely to be within the enclosure the visual assessment was made from this point.



The summit of Twthill is approximately 550m north-west of the proposed development at an elevation which is approximately 16m higher. The view from the summit of Twthill demonstrates that the proposed development would be visible but would not affect intervisibility due to Segontium being at a slightly higher elevation (See Plate 5).



Plate 5: View of Segontium from the summit of Twthill, proposed development location shown by small arrow.

Given the density of 19<sup>th</sup> and 20<sup>th</sup> century development between Segontium and Twthill, the proposed development would not be detrimental to any views.

There would be no physical impact on the Twthill defended enclosure or any known associated sites.

## 5.5 Roman Drain

**PRN:** 16066

**NGR:** SH4853062560

**Designation:** None

The Roman drain was discovered during the excavation of the foundation for the boundary wall at the rear of properties at Caer Saint and new houses on Pendalar. The drain is likely to continue into the proposed development area and is therefore likely to be physically impacted. Although it cannot be confirmed at present the interpretation of the drain suggests that it originates somewhere under the former school and could be associated with a building outside the fort. Pottery recovered during the brief excavation which was undertaken when the drain was identified appears to date to the 1<sup>st</sup> and 2<sup>nd</sup> centuries which appears consistent with the material discovered during the current evaluation. The drain does not appear to be on the same alignment as any of the features identified during the current evaluation.

## 5.6 Buried Archaeology

*See Figure 4*

The evaluation trenching undertaken to inform the assessment demonstrated that significant Roman deposits remain at the site despite the disturbance caused by the former school. The Roman deposits were encountered at a depth of approximately 0.4m, below the deposits associated with the former school. Down slope of the footprint of the school the deposits were found to be shallower but possible ditches were identified which may be associated with the defences of the fort or drains such as the one discussed in Para.5.5.

The evaluation and the previously identified drain suggest that there may be buildings in the vicinity of the proposed development. No structures were identified during the evaluation but it cannot be ruled out that some may be present in the parts of the site which were not investigated by trenching.

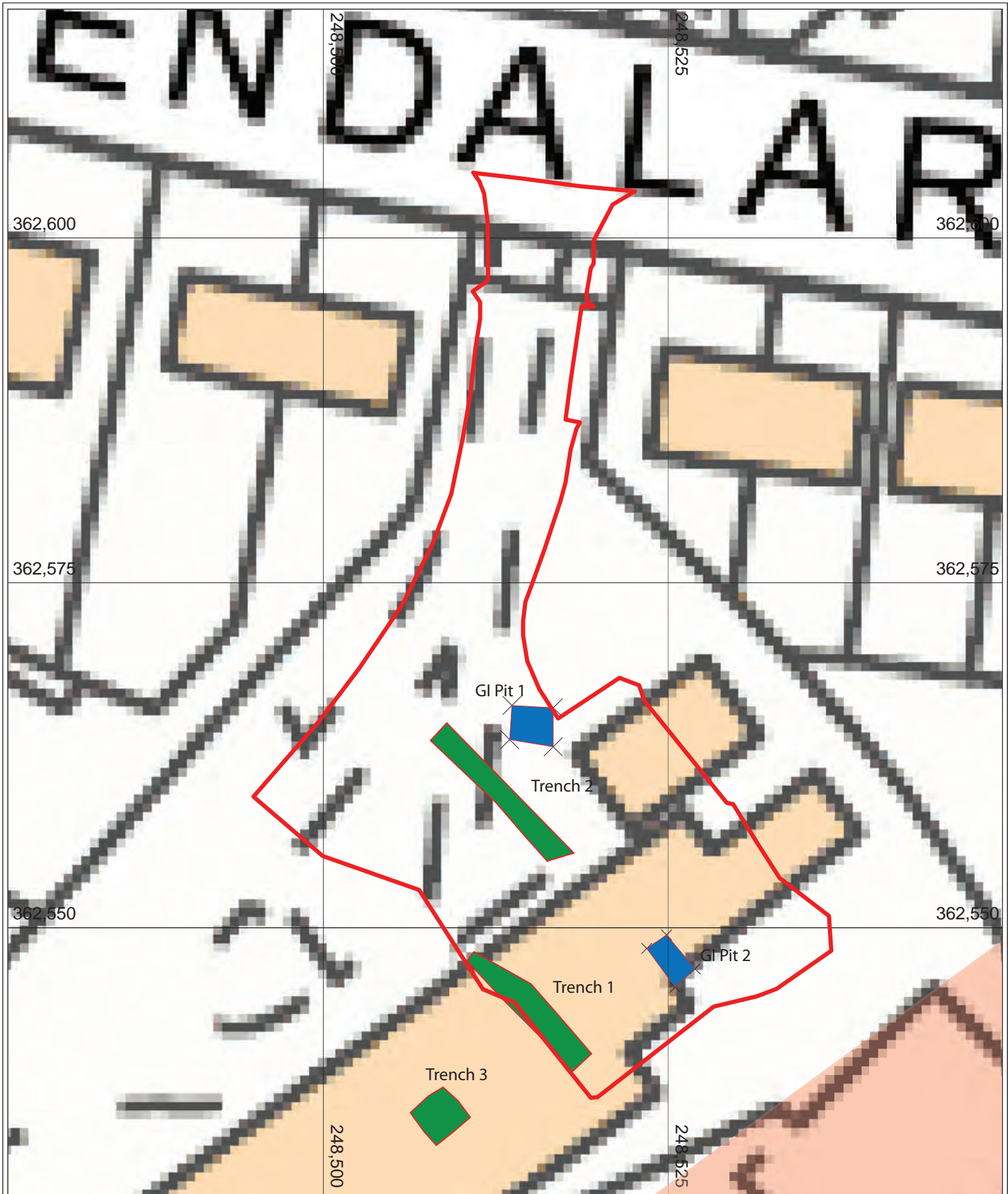
Initial assessment of the pottery recovered during the evaluation suggests that it dates to the 1<sup>st</sup> and 2<sup>nd</sup> centuries AD with a bias towards the 1<sup>st</sup> (Webster, 2019). This suggests that the deposits relate to the early history of Segontium when it was a timber fort. It is possible the deposits are associated with timber buildings which would not be easily identifiable in narrow evaluation trenches.

The evaluation demonstrated that the identified deposits are relatively well preserved despite the construction and demolition of the school and that any construction, including the installation of services, at the site would likely have a significant impact upon them.

## 5.7 Assessment of Impact

Table 4: Assessment of Impact without mitigation

Name	Value	Magnitude of Impact	Significance of Impact
Segontium	High	Minor	Moderate/Slight
Caernarfon Castle and Town Wall	Very High	No Change	Neutral
Lower Fort (Hen Waliau)	High	No Change	Neutral
Twthill Defended Enclosure	Low	Negligible	Neutral/Slight
Roman Drain	Low	Moderate	Slight
Buried Archaeology	Medium	Moderate/Major	Moderate/Large



**Figure 4**  
Site Plan showing location of GI pits and evaluation trenches.

Grid: 25m

**Key**

- Proposed development boundary
- Scheduled Ancient Monument (Segontium)
- GI Pits
- Evaluation Trenches

Drawn By: IGP

Date: 15/11/19

Location: SH48516256

Project Number: AB1809



## 6 Discussion

The proposed development is within an extremely archeologically sensitive area but its scale would not have a significant impact on the setting of the identified high-value heritage assets. There would however be a significant impact on buried archaeology which has been identified within the proposed development area.

The scale of the proposed development and the previous developments around Segontium means that the impact on setting is minor. Given the current condition of the development area it could be argued that the development could have a minor beneficial impact, however as only part of the former school site is being developed and no plans being proposed for the remainder of the site the assessment does not support this. The assessment has shown that the development would not impede visibility towards Caernarfon Castle and Twthill.

The proposed development would have no impact on Caernarfon Castle and Town Wall. The proposed development may be partially visible in views towards Segontium from the castle or the walls but at a sufficient distance to not cause intrusion. There would be no impact on the World Heritage Site or its Essential Setting.

The proposed development would have no impact on the Lower Fort (Hen Waliau). The proposed development would not be visible in views towards Segontium from the Lower Fort.

The proposed development would be visible from the summit of Twthill but not from the defensive bank. The development is unlikely to impede views of Segontium from the summit but would be visible. Given the existing buildings in the views towards Segontium the addition of the proposed development would not have a negative visual impact.

The buried archaeology at the site is of regional importance and would be impacted by the proposed development. As a result, the impact would need to be mitigated if the development is to proceed.



## 7 Mitigation

The assessment has shown that the development would not have a significant impact on the setting of any of the identified high-value heritage asset and would have a minor to negligible visual impact. The greatest impact would be on the buried archaeology which has been identified.

### 7.1 Buried Archaeology

Two methods of mitigation could be considered for the buried archaeology:

1. Preservation in situ (avoidance through re-design), or;
2. Preservation by record (excavation)

#### 7.1.1 Preservation in Situ

The archaeology identified at the site has previously been sealed below the foundations of the former school, as such it has been proven that the archaeology could be preserved again below the foundations of the proposed development.

The original plans for the development were amended to slightly raise ground levels to reduce potential impact to buried archaeology. An assessment has now been undertaken to gain a better understanding of the level of impact the revised plans would have on the archaeology identified during evaluation. The evaluation has not identified the depth of archaeology across the entire development, as such the assessment is based on the assumption that the depth of archaeology is consistent within the development footprint.

Raising ground levels significantly is likely to result in the visual impact and impact on setting to be magnified, possibly resulting in a minor impact on views from the World Heritage Site. In order to preserve the majority of the archaeological deposits identified during the evaluation the entire development would need to be raised by 500mm, to maintain disabled access this is not feasible.

In order to allow disabled access and minimise the impact to the buried archaeology the design has now been amended with the entire development raised by 350mm.

Based on the current plans most of the footprints of both south-eastern plots (plots 2 & 4) would need to be archaeologically excavated to formation level (*see Table 5 and Appendix I*). This would result in archaeological deposits being excavated to depths of between 389mm and 2mm. A third of the footprint of the north-western plots (plots 1 & 3) would require archaeological excavation to depths of between 190mm and 71mm. As well as the foundations for the pods all service trenches would also require archaeological excavation to their maximum depths, this would also include the large soakaway which would be located between plots 1 & 3 (*see Figure 5*). The services will result in 'islands' of archaeology remaining at the site, this will be unavoidable unless the entire development could be raised by approximately 1.5m which would likely result in major impact to the setting of Segontium.

Where possible it is also advised that the design of the drainage is further amended to route services through the areas previously disturbed by services associated with the former school and evaluation trenches. This would need to be reviewed following the initial stripping of the site.

Given the density and potential significance of archaeology identified during the evaluation the ongoing management of the archaeology would also be a concern if this method was employed. The proposed development is subject to planning and as such any impact would be adequately mitigated but future excavations at the site, such as service installations and gardening activities, may not be subject to archaeological input. Cadw have suggested that the archaeology at the site is being considered for designation as a Scheduled Ancient Monument due to its association to Segontium. If this course of action is taken any subsequent development or excavations at the site

would be subject to Scheduled Monument Consent which would address all concerns with the future management of the site. Until such measures are put in place a Management Plan should be produced which would ensure that advice was sought prior to any activity, such as the installation of new services, being undertaken at the site.

A recent well publicised excavation to the south-west of the proposed development could potentially increase the risk of unauthorised excavation or treasure hunting at the site. It is now well known locally that the excavations produced highly decorated pottery and jewellery which may lead to site being targeted. Policing of such activity would not be easy once the development was in use.

The development is relatively lightweight and is unlikely to cause excessive compaction to the underlying archaeology. Despite this the use of a reinforced geotextile would be beneficial in spreading the weight of the development and acting as a barrier to hinder any unauthorised excavations.

#### 7.1.2 Preservation by Record

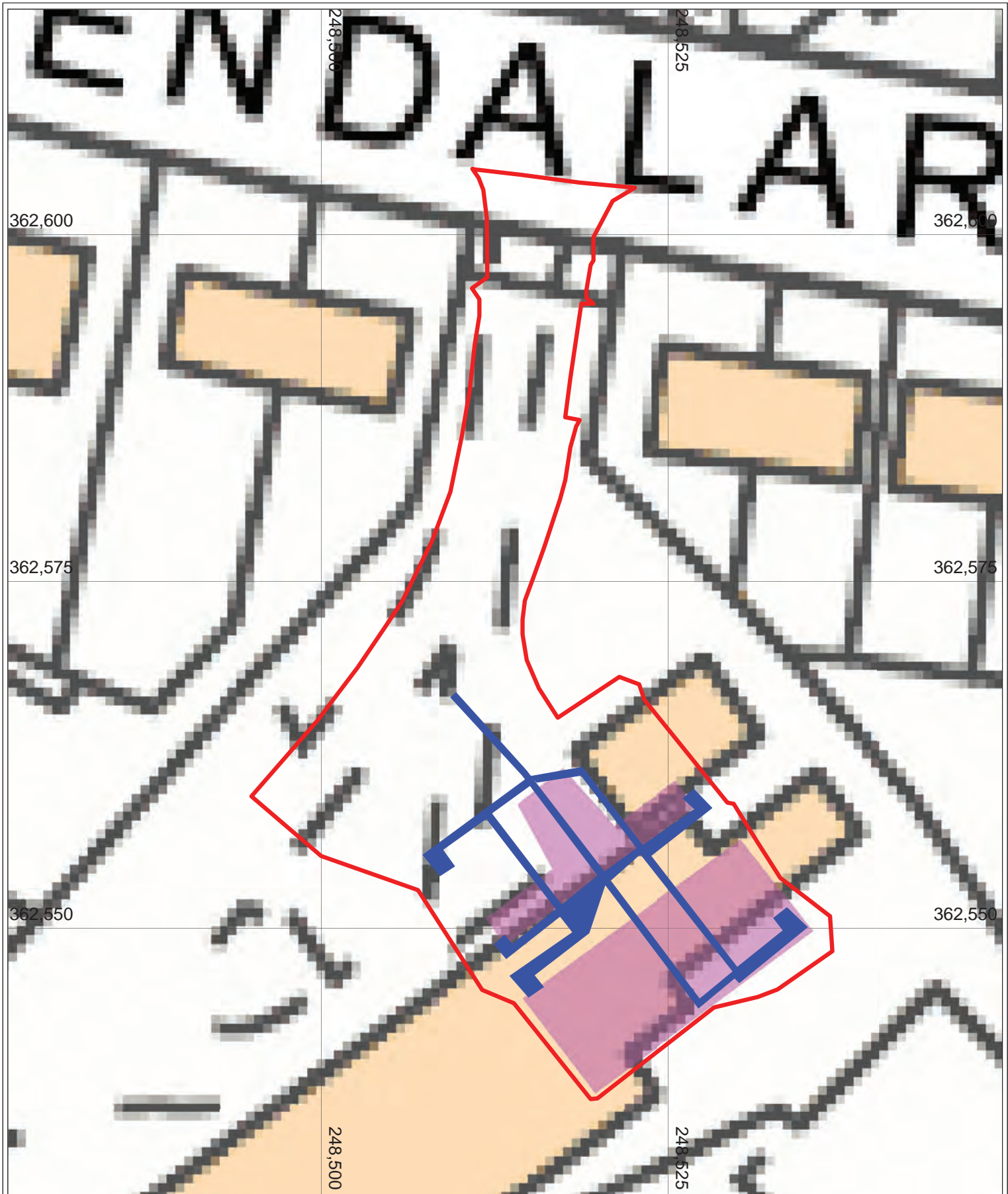
Preservation by record would require the archaeological excavation of the entire footprint of the development.

This method would ensure that all archaeology at the site was adequately investigated, recorded, assessed and published. The information gained would improve understanding of the archaeological development of Segontium and inform future management of the wider archaeological resource. Upon completion of the archaeological excavation construction could commence without further on-site archaeological requirements.

As all archaeology within the proposed development area would be removed ongoing management would not be a concern.

Table 5: Depth of archaeological excavation required for preservation in situ

Chainage	Current Level	Finished Floor Level	Offset	Depth of Archaeology from Current Level	Level of Archaeology	Construction Excavation Level	Depth of Archaeological Excavation (meters)	
1	41.582	41.915	-0.333	0.86	40.722	41.137	-0.415	
2	41.666	41.915	-0.249	0.96	40.706	41.137	-0.431	
3	41.749	41.915	-0.166	1	40.749	41.137	-0.388	Plot 3
4	41.883	41.915	-0.032	1.02	40.863	41.137	-0.274	
5	42	41.915	0.085	1.09	40.91	41.137	-0.227	
6	42.032	41.915	0.117	0.99	41.042	41.137	-0.095	
7	42.096	41.915	0.181	1.06	41.036	41.137	-0.101	
8	42.19	41.915	0.275	1.07	41.12	41.137	-0.017	
9	42.278	41.915	0.363	1.07	41.208	41.137	0.071	
10	42.334	41.915	0.419	1.07	41.264	41.137	0.127	
11	42.387	41.915	0.472	1.06	41.327	41.137	0.19	
12	42.44	41.915	0.525	1.05	41.39	41.137	0.253	
13	42.494	42.495	-0.001	0.97	41.524	41.717	-0.193	
14	42.492	42.495	-0.003	0.83	41.662	41.717	-0.055	Plot 4
15	42.49	42.495	-0.005	0.62	41.87	41.717	0.153	
16	42.489	42.495	-0.006	0.77	41.719	41.717	0.002	
17	42.489	42.495	-0.006	0.64	41.849	41.717	0.132	
18	42.486	42.495	-0.009	0.38	42.106	41.717	0.389	
19	42.483	42.495	-0.012	0.48	42.003	41.717	0.286	
20	42.28	42.495	-0.215	0.46	41.82	41.717	0.103	
21	42.477	42.495	-0.018	0.44	42.037	41.717	0.32	
22	42.466	42.495	-0.029	0.44	42.026	41.717	0.309	
23	42.494	42.495	-0.001	0.44	42.054	41.717	0.337	
24	42.493	42.495	-0.002	0.44	42.053	41.717	0.336	



**Figure 5**  
Site Plan showing location of archaeological excavation required to facilitate preservation in situ.

Grid: 25m

**Key**

- Proposed development boundary
- Foundations Archaeological Excavation
- Services Archaeological Excavation

Drawn By: IGP

Date: 15/11/19

Location: SH48516256

Project Number: AB1809





## 7.2 Setting and Visual Impact

### 7.2.1 Improved Appreciation and Interpretation

The proposed development would have a minor impact on the setting of the fort but if excavations are undertaken as part of the mitigation there is potential to gain a better understanding of the archaeology with the proposed development area and its relationship to the fort. This could provide an opportunity to improve interpretation of the archaeology and increase awareness of the original setting of the fort. This could be done through the installation of updated interpretation panels at the fort or a digital resource such as a website which could be accessed by visitors and those with a general interest.

Given the location of the proposed development, within a residential area, any excavations at the site are likely to generate significant local interest. Excavations could be utilised to increase knowledge and appreciation of the fort, its setting and associated archaeology. Public outreach could work to promote the good practice of the developer and promote appreciation of the site with the view of reducing antisocial behaviour which has been noted as an issue at the fort.

These measures would offset the minor impact to the setting of Segontium but would not act as mitigation.

### 7.2.2 Planting

Planting associated with the development should be designed to consider the potential increase in visual impact and obstruction of views towards Caernarfon Castle and Twthill. Planting should be relatively low not exceeding the roof level of the units.

Screen planting not exceeding the roof level of the units on the south-eastern and south western boundaries of the development may slightly reduce the magnitude of visual impact from Segontium but is unlikely to have an effect on the significance of impact.

## 7.3 Assessment of Impact following Proposed Mitigation

If preservation in situ was employed as the method of mitigation for the buried archaeology there would still be a moderate impact to the archaeology due to the need for limited excavation and the likelihood of future impact.

Table 6: Assessment of Impact with preservation in-situ

Name	Value	Magnitude of Impact	Significance of Impact
Segontium	High	Minor	Moderate/Slight
Caernarfon Castle and Town Wall	Very High	No Change	Neutral
Lower Fort (Hen Waliau)	High	No Change	Neutral
Twthill Defended Enclosure	Low	Negligible	Neutral/Slight
Roman Drain	Low	Moderate	Slight
Buried Archaeology	Medium	Moderate	Moderate

Table 7 shows the assessment of impact following the full excavation of the proposed development area.

Table 7: Assessment of Impact with preservation by record

Name	Value	Magnitude of Impact	Significance of Impact
Segontium	High	Minor	Moderate/Slight
Caernarfon Castle and Town Wall	Very High	No Change	Neutral
Lower Fort (Hen Waliau)	High	No Change	Neutral
Twthill Defended Enclosure	Low	Negligible	Neutral/Slight
Roman Drain	Low	Negligible	Neutral/Slight
Buried Archaeology	Medium	Minor	Slight

It is recommended that the footprint of the proposed development is archaeologically excavated prior to construction to ensure the preservation by record of all archaeology and to ensure that the construction of the units and future excavation works can commence without the need for further archaeological monitoring.

## 8 Conclusion

The proposed development would have an impact on the buried archaeology at the site and as such suitable mitigation would be required in advance of construction. The buried archaeology identified at the site is likely to be significant in understanding the development of Segontium, especially in relation to the early history of the fort during the 1<sup>st</sup> and 2<sup>nd</sup> centuries AD.

The proposed development would also have a minor impact on the setting of Segontium which is a Scheduled Ancient Monument.

Both preservation in situ and preservation by record would be appropriate methods of mitigation for the scheme, each has benefits and drawbacks.

The full archaeological excavation of the footprint of the development would negate the need for raising ground levels and would ensure that all archaeology at the site was preserved by record indefinitely. This method is likely to have higher cost implications during the construction phase of the project but would also negate the need to consider future management of the archaeological resource within the boundary of the development.

Preservation in situ would still require a degree of excavation but the costs are likely to be lower than that of full excavation. All archaeology encountered to the formation level of the structures and the full depth of services would require archaeological excavation. The raising of the development will have a slightly greater impact on the setting of Segontium but this does not change the overall significance of the impact. Preservation in situ will require the future management of the archaeological resource within the development boundary to be considered, as such a management plan would need to be produced and agreed with GAPS. It is also possible that the archaeology below the development could be scheduled which would require that all future work at the site would be subject to Scheduled Monument Consent.

Screen planting not exceeding the roof level of the units would have a minor impact on reducing visual impact from Segontium. Outreach during and after the excavation with a focus on the communities living in the immediate vicinity of Segontium could increase understanding and appreciation of the site and which could have long-term benefits.

Dissemination of results and improved interpretation based on the discoveries made during mitigation could increase understanding of the development and original setting of the fort which could again be a long-term benefit.

The assessment has demonstrated that the overall impact of the proposed development following both methods of proposed mitigation would be Slight.

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## Appendix I: Client Drawings, site layout and cross sections

Chainage	Existing Levels	Horizontal Geometry
41000	100.000	
41500	100.000	
42000	100.000	
42500	100.000	
43000	100.000	
43500	100.000	
44000	100.000	
44500	100.000	
45000	100.000	
45500	100.000	
46000	100.000	
46500	100.000	
47000	100.000	
47500	100.000	
48000	100.000	
48500	100.000	
49000	100.000	
49500	100.000	
50000	100.000	
50500	100.000	
51000	100.000	

[illegible]

A	Vertical Design has been ammended (Approx 0.35m Higher)	GNW	08/11/2014	AGJ
REF NO.	NEW/ID/AD/AL MODIFICATIONS	GNW	08/11/2014	AGJ



CYNLLUN / SCHEME :  
Proposed development at Tai C  
Segontium

TEITL LLUNIAD / DRAWING TITLE :  
General Arrangement

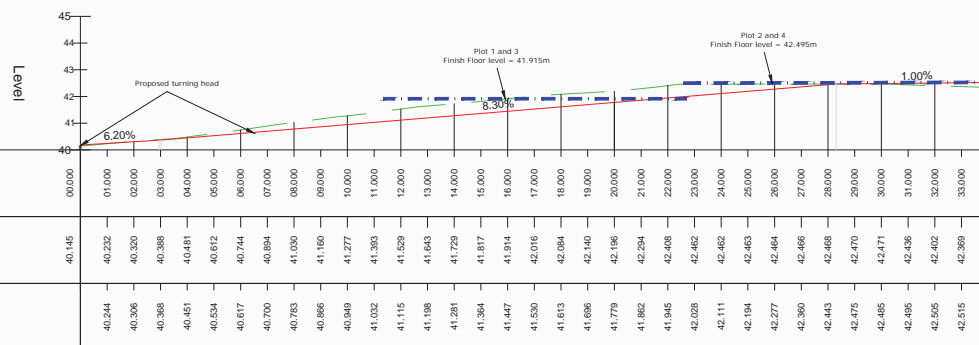
DARLUNWYD GAN : DRAWN BY :	GWW	DYDDIAD DARLUNWYD : DATE DRAWN :	14/05/19
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GWIRIWDYD GAN : CHECKED BY :	AGJ	DYDDIAD GWIRIWDYD : DATE CHECKED :	14/05/19
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Tallen	o	GRADDFEYDDO :	1:200
Sheet	of	SCALES :	

Rhif Lluniad Drawing No.	6445/GA/302
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Chainage

### Existing Levels

### Proposed Levels

Sellyd or Iag yr Arddyr Ordona gods  
chanted Rhwyd Gwag at Moynyd.  
Oeddyr hawldirid yr Gorn.  
Mae alghyrru hwyd awndurid yn tant hawldirid  
yr Gorn a gall awndurid at awndurid new aches still.

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Uned G8/12, Intec ◊ Parc Menai ◊ Bangor ◊ Gwynedd ◊ LL57 4FG  
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