Report No: 2014R006

Geevor Mine

Pendeen, Cornwall

Conservation Management Plan

Historic Environment Projects

Geevor Mine, Pendeen, Cornwall

Conservation Management Plan

Status	**Final draft for adoption**
Client	**Tamsin Daniel, Economic Development & Culture, Cornwall Council**
Report Number	**2014R006**
Date	**1 July 2014**
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Acknowledgements

This Conservation Management Plan was commissioned by Tamsin Daniel on behalf of Economic Development & Culture and produced by Historic Environment Projects, Cornwall Council.

The views and recommendations expressed in this report are those of Historic Environment Projects and those of the other authors and organisations whose reports are summarised here. They are presented in good faith on the basis of professional judgement and on currently available information.

I am grateful for the assistance given me in drawing up this plan by a number of knowledgeable individuals, including Mike Simpson, Nick Thomas, Janet Quinton, Bill Lakin, Peter Savage, David Wright, Nick Hudson, Eddie Strick and other PCH guides, Jeremy Williams (Cornwall Council) and Nick Russell (English Heritage). Jo Warburton (former curator, PCH) provided useful comments on relevant aspects of the plan. Spalding Associates produced a review of the ecological information relating to the site and assisted in drawing up policies relating to the natural environment of the site.

Freedom of Information Act

As Cornwall Council is a public authority it is subject to the terms of the Freedom of Information Act 2000, which came into effect from 1st January 2005.

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Abbreviations

CC	Cornwall Council
CMP	Conservation Management Plan
EH	English Heritage
HAR	Heritage at Risk
HER	Cornwall and the Isles of Scilly Historic Environment Record
HLF	Heritage Lottery Fund
LB	Listed Building
NGR	National Grid Reference
NPPF	National Planning Policy Framework
OS	Ordnance Survey
OUV	Outstanding Universal Value
SWOT	Strengths, Weaknesses, Opportunities and Threats
WHS	World Heritage Site

1 Executive Summary

Geevor Mine, for almost the whole of the 20th century the only mine of significance to operate within West Penwith, and the economic and cultural heart of its local community, was saved for the people of Cornwall in the face of otherwise certain obliteration in 1992 following its final closure as a working mine in the autumn of the previous year. Over the past two decades, Geevor Mine has been developed into a prestigious heritage site, one which annually attracts in excess of 35,000 visitors and currently employs 26 local people. The decision to save the site from the scrapmen and the developers was a wise one – in recent years almost all the physical remains of both Wheal Jane and South Crofty - the only other two large 20th century tin mines in Cornwall - have been razed to the ground, and much of what survives at Geevor is now exceptionally rare, and some components represent the only surviving examples anywhere in Britain.

In 2002, following initial safety works to the site, a first version of this Conservation Management Plan was drawn up to guide its short and medium term development. Many of the aims and objectives set out in that first Plan have now been achieved – Geevor has been designated as a nationally important Scheduled Monument and is the Key Centre (west) for the Cornish Mining World Heritage Site, inscribed in 2006. Extensive conservation programmes undertaken in 2001 and 2007-8 not only tackled long-standing problems with many of the buildings, but also enabled a purpose-built Hard Rock Museum to be constructed in the old Top Fitting Shop. The underground tour has been doubled in length and the site now has dedicated learning, outreach and marketing staff, as well as experienced guides.

Twelve years on from the writing of that first Plan, this update has been commissioned in order to chart the way forward for the site, and to ensure that any proposals for development retain those values which make the site so significant. In the light of increasing pressure on Council budgets and at a time when a new operational contract for the site has just been awarded, this Plan will provide an important tool in evolving pragmatic and appropriate solutions for the development of the site.

The Plan sets out, in summary, what is known about the Geevor site and what is significant about it, issues and vulnerabilities affecting it, a conservation philosophy for the site with linked vision and aims, together with a series of policies which will be adopted jointly by the site owners and managers to ensure the appropriate management and development of the site. Appendices detail some of the specific building issues identified as currently affecting the site, provide a detailed SWOT analysis and set out some of the proposals for site development currently under consideration. Detailed feature sheets have also been produced for all of the buildings making up the site, together with pro-forma sheets which will be used by site staff to record all maintenance works.

It is hoped that this document will prove a useful tool in taking the Geevor site forward, further developing the unique resource which it represents. In particular, focus has been given to considering uses for empty or under-used buildings, especially those making up the early historic core of the site around Wethered Shaft, in order to make the site as a whole more financially viable, sustainable and enjoyable by all.

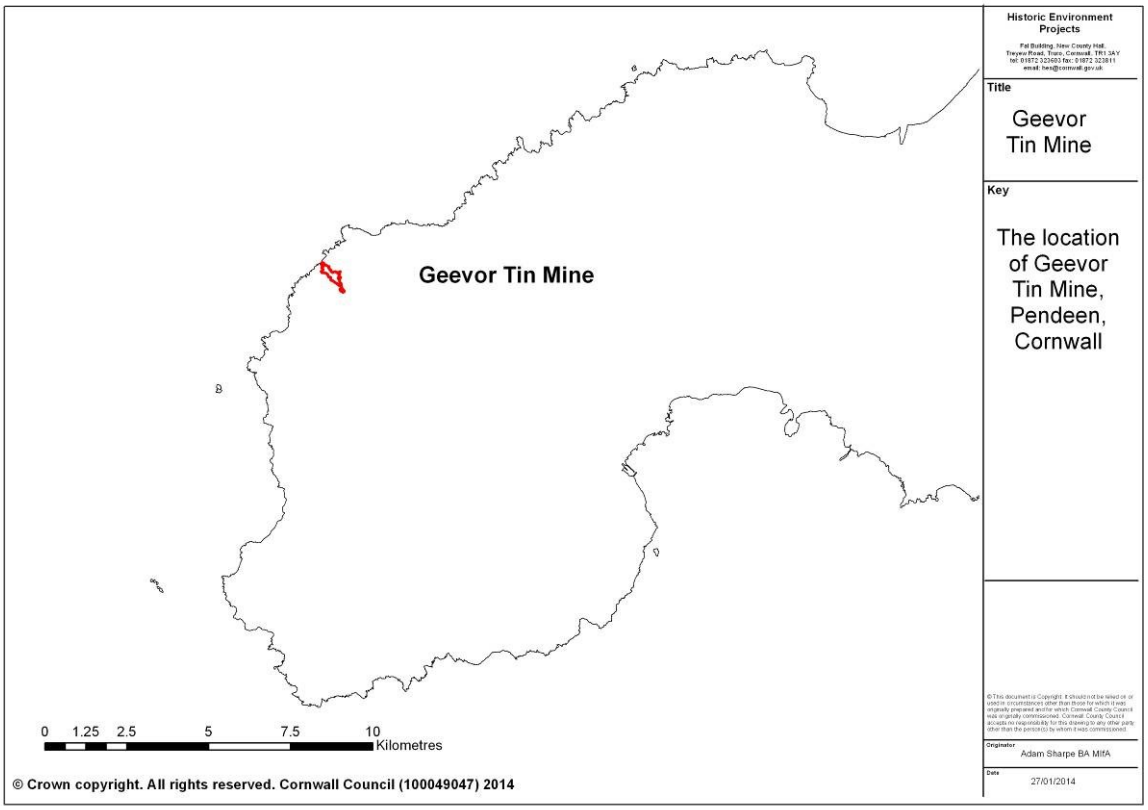

Fig 1. The location of Geevor Tin Mine, Pendeen, Cornwall.

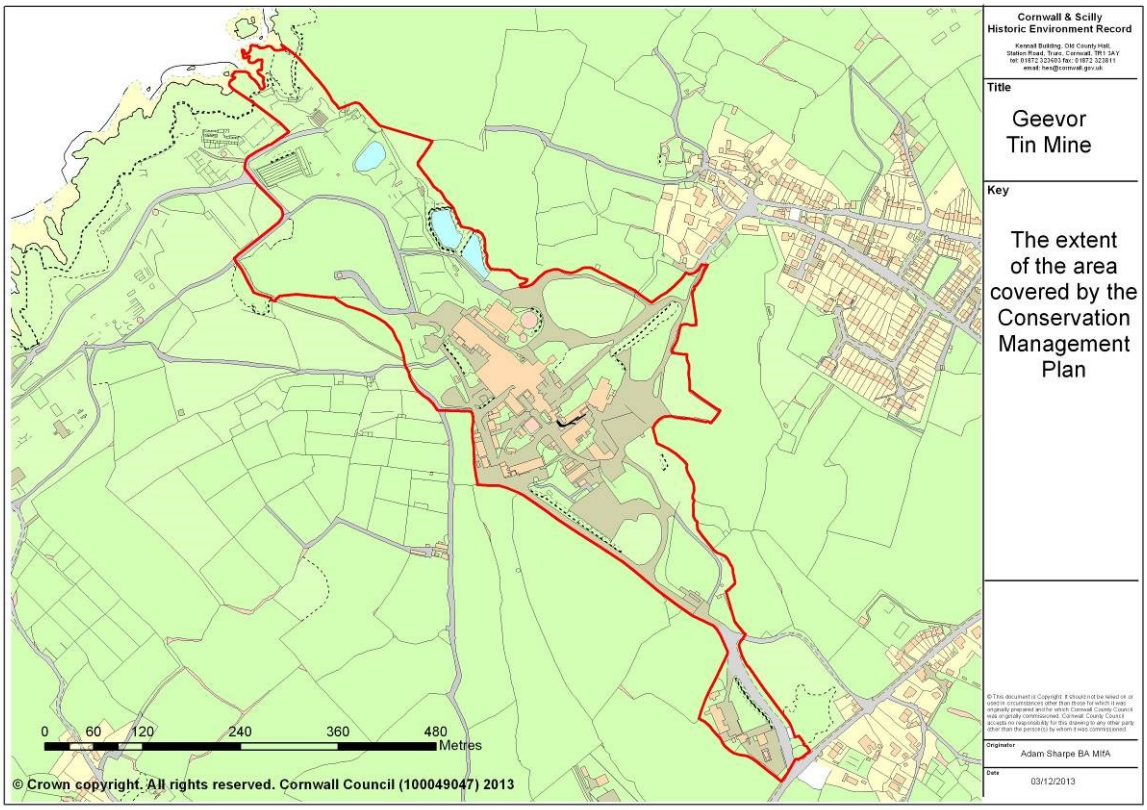

Fig 2. The extent of the study area at Geevor.

2 Introduction

This Conservation Management Plan is intended to provide an easily understandable introduction to Geevor Mine which will enable all readers to understand the site and its significance, as well as the natural, historic and technological processes that have created it. It sets out the issues which currently affect it, the philosophy which should underpin proposals for its future management and the ways in which the management vision for its future can be realised. Volume 1 sets out what we know of the site, issues affecting it, the philosophy which should underlie its management, a statement of significance and policies derived from this. Appendices list significant artefacts, present a SWOT analysis for the site, provide a list of unused and under-used buildings, summarise the condition of each of its buildings and set out some potential aspirations for the development of the site. Volume 2 comprises the detailed feature sheets and sample maintenance work record form. Both volumes are also available on a CD-Rom, together with the record photographs produced during the site assessment, as it is intended that the feature sheets should be updated periodically by the site managers.

2.1 CMP background

Geevor Mine developed in the first decade of the 20th century within the former setts of North Levant and East Levant, themselves 19th century reworkings of the much earlier Wheals Mexico, Geevor and Stennack. The mine operated continuously until 1986 when it was temporarily closed in the wake of the October 1985 International Tin Crisis. The mine reopened in 1987, but proved unviable. Mining was stopped in 1990, and it finally closed in 1991. The mine was purchased as a series of land parcels between 1992 and 1998 by Cornwall County Council with the intention of setting up a large scale heritage site to interpret hard rock mining in Cornwall, key items of machinery having been purchased following the closure using a grant from the National Heritage Memorial Fund to prevent them being sold for scrap. An extensive programme of safety works were carried out over the following years, whilst the heritage centre opened to the public in 1993. A preliminary Conservation Plan was drawn up by PLB Consulting in 2002 to provide the information and guidance needed to assist proposed site developments.

Large scale building conservation works were subsequently undertaken in two stages – in 2001 and in 2007/8, a prestigious new museum of Hard Rock Mining being created during the second phase of works.

Whilst the site was initially operated directly by Cornwall County Council with a small number of paid staff assisted by volunteers, its management passed to The Trevithick Trust soon afterwards. Pendeen Community Heritage, a locally-based charitable trust established with the sole purpose of preserving and operating the Geevor site, took over the management contract in 2001.

With the awarding of a new management contract for the site being imminent in 2014, the decision was taken to update the existing Conservation Management Plan. Many of the aims of the original Plan had been met as a result of the building conservation works programme. In addition, there had been significant changes in planning legislation since 2002 and outline proposals were being considered for some unused buildings in the southern part of the site. It was therefore strongly felt that a Plan revision was required to guide the future management of the site.

Significant actions and events affecting the Geevor site between 2001 and 2014

- 2001 Pendeen Community Heritage awarded the management contract for Geevor Tin Mine.
- 2001 First round of building conservation works undertaken at Geevor.
- 2002 PLB Consulting Ltd. produces first Conservation Management Plan for Geevor.
- 2002 Geevor's western Brunton calciner designated as a Scheduled Monument.

- 2002 Geevor oral history project established.
- 2003 Holmans collection display created in Bottom Fitting Shop.
- 2004 Geevor collections policy produced.
- 2004 Cornish Mining World Heritage Site marketing strategy issued.
- 2005 The majority of the Geevor site designated as a Scheduled Monument.
- 2005 Cornish Mining World Heritage Site management plan issued.
- 2005 Cornwall and the Isles of Scilly Geodiversity Action Plan produced.
- 2006 Cornish Mining Word Heritage Site inscribed by UNESCO. Geevor included within Area A1 (The St. Just Mining District).
- 2006 Geevor interpretation strategy produced. Geevor Accessibility audit undertaken.
- 2006 Roberts' Shaft located and capped.
- 2006/8 Detailed ecological surveys undertaken at Geevor.
- 2007/8 Second round of building conservation works carried out. Hard Rock museum opened as part of the Cornish Mining World Heritage Site Discover the Extraordinary project.
- 2008 Geevor and Levant landscape study undertaken.
- 2008 Wheal Mexico adit extension feasibility study undertaken.
- 2008 Geevor/Levant biodiversity trail laid out.
- 2009 Geevor collections policy reviewed.
- 2010/11 Wheal Mexico adit visitor tour extension undertaken.
- 2010 Cornish Mining World Heritage Site learning strategy issued.
- 2010 Draft Cornwall Local Plan produced.
- 2010 Geevor designated as the Cornish Mining WHS Key Site (west).
- 2011 Cornish Mining World Heritage Site OUV statement issued.
- 2011 Cornwall AONB management plan issued.
- 2012 National Planning Policy Framework (NPPF) issued, replacing former PPG planning guidance.
- 2012 Geevor collections policy further reviewed.
- 2013 1st revision of Cornish Mining World Heritage Site management plan issued.
- 2014 Pendeen Community Heritage awarded new management agreement for the Geevor site.

2.2 Aims and purpose

The overall aim of the plan is to ensure that the significance and special importance of Geevor Mine are retained and enhanced through future maintenance, conservation and development works on site. The broad aims of this Plan are:

- To undertake a thorough assessment of the physical and cultural resource presented by the Geevor Mine study area (see Fig 2 for the extent of the area covered by this Plan).
- To identify significant building phases and original features within each building.
- To devise a conservation philosophy for the site as a whole, as well as a range of specific policies which will ensure that the site is protected, promoted, understood and assimilated into future decision-making processes.

- To inform the design process for any future conservation, repair and adaption for reuse of the structures making up the Wethered Shaft site at the entrance to the mine complex, and to consider the potential for alternative future uses for other under- or un-used buildings on the site as a whole.
- To support grant applications for the continued enhancement of the site.
- To inform the long-term management of the site.

2.3 Conservation Management Plan methodology

The format and contents of this document follow the sequence recommended in the Heritage Lottery Fund Guidance, Conservation Management Planning (April 2008). Detailed block plans of the buildings making up the Geevor site are provided as an annexe to this document.

This plan has been prepared by members of the Cornwall Council Historic Environment Projects team. A review of ecological and mineralogical information relating to the site was undertaken by Spalding Associates of Truro.

The first sections of the plan were produced in draft for review by stakeholders in the Geevor site, both before and during a workshop session. The nature and form of the remainder of the Plan were discussed at the same time. The stakeholders included personnel from Pendeen Community Heritage, Cornwall Council, the Cornish Mining World Heritage Site office and St. Just Town Council. Key stakeholders were consulted on a Consultation Draft of the full document.

3 Understanding the site

3.1 Introduction

This section of the Conservation Management Plan seeks to provide the information required to understand the history, nature and varied significances of the Geevor site.

3.2 Area context

3.2.1 Location

See Figs 1 and 2.

Geevor Mine is to the north east of St. Just in Penwith on coastal land to the north of the settlement of Trewellard, the extensive site being centred at SW 37544 34507. The site extends to 17.2 Hectares (172,100 m^2). It is accessed by vehicle via a metalled roadway running north from the B3306 at Trewellard, and by foot along the Cornwall Coast path at the northern edge of the site, and by means of footpaths from Boscaswell to the north east, Levant to the west and Trewellard to the south west. The number 300 bus route connecting St. Ives and Lands End along the B3306 coast road runs in and out of the site during the visitor season.

The area covered by this plan covers the core of the former operational Geevor Tin Mine, extending from the Wethered Shaft complex adjacent to the B3306 and extending down to the cliffs at Trewellard Bottoms. Those parts of the former Levant Mine site which are part of the same Cornwall Council ownership parcel are excluded from this Plan. See Fig 2 for the boundary of the area covered by this Plan.

3.2.2 Landscape setting and character

See Figs 13 and 22.

Landscape setting

The surface buildings of Geevor Mine occupy a shallow valley leading from Trewellard Carn to the sea at Trewellard Bottoms; set on a north-west facing stretch of the rugged Wet Penwith coastline and backed by the moors which form a spine of high ground backing the north coast of the Peninsula, Geevor lies near the heart of a district which

witnessed mining activity from at least the Roman period through until the last decade of the 20th century. Immediately to the south of the site, the collection of hamlets strung out along the St. Ives road from Bojewyan to Truthwall have been the homes of miners and their families since the late 18th century, possibly longer. Pendeen Church was built by miners and the pubs and inns of Pendeen, Trewellard and Botallack quenched their thirsts. St. Just a few miles to the south west is the nearest settlement of any size and grew up rapidly from a humble churchtown almost overnight during the early 19th century to house the rapidly expanding mining population, and to provide for their needs.

The development of deep hard rock mining provided employment for a far larger population than the traditional local industries of subsistence farming and small-scale fishing could have supported. Even though its heyday lasted for little more than two centuries, its mark on the landscape has proved indelible – this is a landscape punctuated by mine chimneys, ruined engine houses and mine headgears, its settlements made up of clusters and rows (terraces) of plain two storey granite cottages.

Geevor itself sprawls down the former valley towards the sea, an intimate mixture of old and new, 19th century granite mine buildings being intermixed with early 20th century timber buildings and the more monolithic concrete structures erected during the later parts of the 20th century. Victory Shaft headgear stands tall above the whole, forming an orientating landmark from much of the surrounding countryside. When the mine was working, it is said that few local people carried watches – the mine hooter blew regularly through the day, marking the beginnings and ends of shifts, its blast audible from miles around the mine. Now it, like the sonorous old foghorn at Pendeen Watch, has fallen silent.

The landscape surrounding Geevor carries the evidence for a long landscape history - the Bronze Age barrows, standing stones and stone circles up on the moors, the sinuous field boundaries that hint at a late prehistoric fieldscape underlying most of the agricultural land in the district, the Tudor manor houses with their distinctive kneeler stones and the deep gashes in the cliffs and humps and hollows on the moors where early tinners laboured to make some landowners wealthy men, the wheelpits and leats which miners used for centuries to stamp and dress their ore, the miners' smallholdings on the fringes of cliff and moor, the stark, unadorned mining settlements with their chapels and pubs and, most recently, the second homes and the bungalows which have begun to fill in longstanding gaps within the hamlets.

The sea is a constant presence – rarely out of sight and rarely out of hearing, and its salty breath pervades the air. What are less readily appreciable are the miles of workings which tunnel under this landscape. Those at Geevor extend down to depths of over 700m from surface and far out under the bed of the Atlantic, but many of the earlier, shallow workings are barely a few metres beneath the surfaces of local fields and streets. Many of those gaps between the old houses were left with good reason.

Character

Like the rest of West Penwith, St. Just had, for generations upon generations, been an area dominated by long-established, hard-working, tightly-knit, inter-related families, whose distinctive accent and reliance on small-scale farming, fishing and, above all, mining, marked them out from their neighbours elsewhere in Cornwall. This was an almost entirely working class area, whose inhabitants still think of themselves as authentically Cornish. There is still considerable pride in that traditional way of life and in what their forebears achieved under such difficult circumstances, but its corollary is a degree of wariness of the outsiders who have pushed up local house prices, of the recently-arrived artists and second home owners, and a resentment that jobs for real men, and the pride which that brought, have gone for ever. The inhabitants of this landscape have a strong relationship with it – all local families, even those who mined for generations, are related to farmers. They are aware that this landscape is different from much of the rest of Cornwall, and know that it looks the way it does because of generations of hard and often dangerous work.

From the outside, St. Just has long been seen as somewhere rather set apart, its landscape, like its inhabitants and the basis of its economy bearing the imprint of generations of mining. Treeless and rugged, peripheral, west of Penzance – the last outpost of civilisation - its landscape undeveloped, unsophisticated, its economy constantly subject to the harsh whims of industry. This is a landscape whose weather was often described as being characterised by fog, wind and rain. Much has now changed following the influx of second home owners, retirees and artists; there is a strong recognition of the particular special qualities of this landscape. To many, West Penwith is regarded as having a strong 'Celtic' character, a tourist destination for the more sophisticated, those who appreciate landscapes which appear to have changed little. The abandoned engine houses are now viewed as very much part of the St. Just coast, rather than an intrusion on it.

Geevor, too, has become a part of the local landscape, even though it is no longer the busy hub of the area, and despite its relative modernity. Its transition into a heritage site has been managed well, and despite much work to make the site safe and enjoyable for visitors, it retains much of its authentic gritty character. Even on the sunniest day the site reminds you that this was a place of serious, and often dangerous endeavour.

3.2.3 Geology/mineral lodes

Cornwall derived much of its wealth from its geology. Its granite uplands extend westwards from Dartmoor to West Penwith and the Isles of Scilly, creating a spine of elevated outcrops, each surrounded by sedimentary rocks of Devonian origin locally known as killas. Mineralisation has occurred within and close to the contact areas between the granite intrusions and the surrounding country rocks, creating lodes, or deposits of tin, copper, zinc, lead, silver, iron and other minerals. This mineral wealth has been exploited since prehistoric times, giving Cornwall its early importance as a supplier of metals to Europe. Cornwall and parts of Devon were also major European tin producers during the medieval period.

The Geevor mine site overlies the contact between the Lands End Granite to the south east and the metamorphosed sedimentary rocks which here form the coastline, the contact locally being exposed in shallow mine tunnels near the foot of the mill complex. Mineral lodes within the contact zone and extending a short way back into the granite tend to trend north-north-west to south-south-east, though differently trending *caunter* lodes also occur. At Geevor, the lodes predominantly carry cassiterite – the principal ore of tin – though polysulphide ores carrying copper, arsenic, iron and traces of other minerals are also encountered. Levant, immediately to the west of Geevor, produced massive amounts of copper ore during the 19th century, whilst the smaller Pendeen Consols to the north-east also predominantly produced copper ores.

Lode names at Geevor have changed over time, though those exploited during the initial phases of operation of the mine were North Pig, South Pig and Borlase's.

A surface plan of North Levant and Geevor dating to *circa* 1908-11 depicted (from east to west) the closely-set courses of North Lode, Borlase's Lode, Mexico Lode and Geevor Lode in the northern part of the site; in the southern part of the site (and again from east to west) the plan shows Fern Lode (Fên Lode on Trewellard Hill), Pig Lode (diverging from Geevor Lode on its eastern side), Mundic Lode (cross-cutting) and Black Lode (the last two little-developed), Peeth Lode, Stannack Lode and Great Common Lode (the last two being within the former sett of East Levant). On the northern part of Trewellard Hill (from east to west) the plan showed the continuation of Fern (Fên) Lode and Peeth Lode, Bristow Lode (Bristol Lode in 1780), Wheal Bal Lode, the continuation of Stannack Lode and Wheal Bennett's Lode, whilst on the southern part of Trewellard Hill were Wheal Penn Lode, Wheal Carne Lode, an un-named lode, Wheal Widden Lode, Wheal Bal Lode and Morvahmen's Lode (the last extending southwards into the sett of the Botallack Mines Ltd.).

Many of these lodes were subsequently worked by North Levant and Geevor, though under different names. A plan of the Geevor Tin Mines Ltd. workings dating to the first decade of the 20th century showed North, Borlase's, Mexico and Geevor Lodes in the

northern part of the site, Fern, Pig, Mundic, Black, Peeth, Stannack and Great Common Lodes in the southern part of the site and Pane, Wheal Carne/Fern, Wheal Widden, Peeth, Bristow, Wheal Bal, Stannack, Bennett's and Morvahmen's Lodes on Trewellard Hill. In 1912, a plan in the Geevor Archive provided little detail of the northern end of the site, but workings at several levels on the courses of the following lodes were shown underlying the Trewellard to Pendeen Road (from east to west): Pig Lode, Jumbo Lode, Caunter Lode, Mundic Lode and Black Lode. A further undated plan (again probably dating to around 1912) showed no detail of lodes in the northern part of the site, the workings shown on this plan suggesting that the focus of activity lay in the area around Pig Shaft and Wethered Shaft, the lodes shown as being actively worked being Pig, Jumbo, Caunter, Blue, Black and Mundic. The Geevor sett was shown as being bounded to the south by the Trewellard-Pendeen Road, with the 'Geevor Extended Sett' (the area which had just been taken on for working) running up onto Trewellard Hill. The active shafts were Robert's, Ladderway, Pig, and Wethered, with Wheal Carne Shaft shown on Trewellard Hill. The deepest workings were at the 5th Level (200' below Deep Adit).

During the first decades of the 20th century, most work was concentrated on North and South Pig Lodes, together with North Lode and Branch Lode; by the 1940s the mine had undertaken a substantial amount of prospection and the lodes reported as being worked were No 1 Branch, North, North Pig, New, No 2 Branch, Coronation, Hangingwall Branch, Wethered, Borehole, Wethered No 2, 8th Prospect South and A, B, C, D and E Lodes. In 1957 the principal lodes being worked were Coronation, No 3 Branch, Wethered, North Pig and Borehole; in 1960 Wethered, Borehole, North Pig, North, No 1 and No 2 Brach lodes were being exploited; in 1963 Borehole, Grenfell, South Pig and Boscaswell Main were the lodes mentioned as being worked in the annual report, the mine having recently taken on the former Boscaswell setts. During the late 1960s, Geevor expanded into Levant to the south and west and in 1977 lodes mentioned as being worked or developed were Simms, Boscaswell Bill, Boscaswell No 1, Boscaswell No 2 (to the east), the Hangingwall Vein of the Footwall Branch Lode (adjacent to Levant), Grenfell, Prospect No 1 and Whisky, with Wethered and Coronation Lodes additionally being reported as being worked in the following year.

David Kneebone, former Mine Manager at Geevor, confirmed (pers. comm.) that the lodes which outcropped over a width of about 475m on Trewellard Hill converged as they entered the Geevor site, near the weighbridge their outcrops occupy a space of ground about 250m wide, this telescoping to about 100m in the area below the mill. In some cases these conjunctions would certainly have led to localised enrichment (as with the documented carbona near Redburrow Shaft); elsewhere some lodes might have pinched out or coalesced. As the lodes approached the killas-granite contact (this being near the foot of the mill at surface, but dipping steeply to the north-north-west), their richer zones would have been found at increasing depth as they were developed towards the sea, possibly accounting for the relative scarcity of early small shafts in the area nearer the cliffs. The waste material partially backfilling the apparently earliest workings on the lodes running into the back of Trewellard Zawn shows indications of having carried considerably more copper than any of the outcrops inland, which, near surface, seem to have been worked solely for tin where they were in the granite.

3.2.4 Site designations

International

The whole of the Geevor site is included within Area A1 (St. Just Mining District) of the Cornwall and West Devon Mining Landscape World Heritage Site, inscribed by UNESCO in July 2006. Geevor is the Key Centre (west) for the Cornish Mining WHS.

National

See Figure 21.

The whole of the former Geevor Mine site, with the exception of the Wethered Shaft complex, a former gravel storage area to the east of the core of the mine and a section of ground to the east of the mine weighbridge was designated as a Scheduled Monument

in 2005. This was based on a review of designations relating to the site which were formerly limited to the western Brunton calciner adjacent to the mill, this having been designated as a Scheduled Monument in 2002. There are no Listed Buildings within the core part of the Geevor site, though the Wethered Shaft headframe was so designated in 1995. The present headframe is a replica constructed following its collapse in the winter of 1999/2000. Although it is understood that the replica headframe was to be de-listed, it still appears on the English Heritage List at Grade II.

The site lies wholly within the Cornwall Area of Outstanding National Beauty – a designation equivalent to that of a National Park.

The coastal fringes of the site are designated a Site of Special Scientific Interest (see Fig 21).

Regional/County

See Figure 21.

County designations applying to the Geevor site include Area of Great Historic Value - AGHV (whole site), Heritage Coast (whole site), Area of Great Scientific Value – AGSV (the northern section of the site), and Regionally Important Geological and Geomorphological Site – RIGS (this applying to the coastal strip, the spoil dump near the Mexico Adit exit and contact exposures between the granite and killas underground within the Wheal Mexico Adit system). The coastal strip falls within the Cape Cornwall to Great Moor Zawn County Wildlife Site.

3.3 Historic context

The landscape around Geevor, like that of the rest of the St. Just area shares its underlying granite geology and soil, general topography and aspect with that of the neighbouring coastline stretching eastwards to St. Ives. Studies carried out by archaeologists show that the two areas shared a common history of landscape development for many thousands of years. The resulting stretches of West Penwith are palimpsests of surviving elements of earlier landscapes – some no more than a couple of hundred years old, some dating from a reorganisation of parts of the landscape during the Medieval period, others preserving boundary lines laid out in prehistory. Almost none of the elements of these landscapes are 'natural', even the open moorland – all have in one way or another been influenced by human activity. Clues to the factors which shaped these landscapes are evident, not only in the physical evidence for past human activity, but also in part within the natural environment, where often subtle differences in local flora can indicate historic farming practices, in particular the degree to which certain areas of relatively marginal land were at times used to produce arable crops.

Whilst landscape surveys reveal that the areas share common historic landscape-shaping activities, the area around St Just is crucially different as a result of the industrialisation of local mining during the late 18th century, and in particular during the 19th century. These factors not only radically changed the local landscape at the time, but also influenced the ways in which it has subsequently developed, giving it a noticeably different character from that of the rest of West Penwith.

Outline historical landscape development

Within the West Penwith landscape between Morvah and St. Ives, it is clear that change over the past 3000 years has mostly been gradual and relatively limited, demonstrating considerable continuity of farming methods, the retention of long-established divisions within the landscape, and long-standing traditional means by which the resources offered by its coastland, moorland and the fertile coastal plateau were exploited. This area provides our clearest glimpses of the layout of the late prehistoric landscape of the West Penwith peninsula and its modification throughout the Medieval period. Through detailed survey undertaken by CCRA and CAU (now HES) and the National Trust during the 1980s and 1990s archaeologists have built up models for the development of this landscape.

In the area around Geevor, however, the more recent development of the landscape has been more complex, large scale mining and its associated developments during the 19th century and, to a smaller extent during the 20th century, having significantly modified areas of the earlier farming landscape. Mines, with their engine houses, dressing floors, tramways, shafts and, most importantly, waste disposal areas, spread across many parts of the coastal zone, their workings in place overlying much earlier tin streamworks.

In addition, a hugely increased mine workforce and their families needed to be housed in a landscape whose population had previously been very small indeed, new settlements of terraced cottage rows appearing during the early 19th century, whilst a rapidly-increasing local population was in part fed by the smallholders whose established their holdings on former open upland, by local farmers who reorganised parts of their holdings so that they could be more efficiently operated, from what had previously been open commons where new, large fields were created, or by farmers elsewhere in Cornwall. The early 19th century growth of new urban centres like St Just and the chain of mining villages along the newly formalised north coast road further increased the demand for the more efficient use of farmland.

The development of the landscape around Geevor from prehistory to the present day

Whilst every local farmhouse probably has its own small collection of bits and pieces of flint, pottery or worked stone ploughed up over the years, most early sites within this area remain lost or unrecorded. As a result, our knowledge concerning the activities of the inhabitants of this area in prehistory is almost wholly confined to the upland and coastal areas of the St. Just landscape, where cairns, holed stones, a stone circle, an entrance grave, other ceremonial or ritual sites and a small hillfort, together with occasional hut settlements and fragments of rather marginal field systems survive or were recorded by antiquarians. These sites fascinate the visitor, and feature in many local guidebooks to the area, but we can see from examination of the Zennor landscape that they can only be a small part of what formerly existed, and that the coastal plateau was where most people lived, worked and farmed. Using models from Zennor and Morvah, it is possible to extricate something of the equivalent landscape in the St. Just area and to make an educated guess at what it might have looked like

Mesolithic (8000BC to 4000BC)

There have been people living in this landscape for at least 10,000 years, from the period following the end of the last Ice Age. Not unsurprisingly, the evidence for early prehistory is fairly scanty, but what survives is very durable, since it consists of scatters of the waste products of flint tools manufacture during the Mesolithic period. All have been chance finds, usually following ploughing, and are particularly distinctive, indicating a highly sophisticated ability to produce the generally small, precisely shaped, sharp flakes of flint used to make tools for hunting, food processing and the preparation of materials for clothing. The site found at Geevor in 1995 is typical of these. It was completely unsuspected until worked flints were found during an archaeological watching brief during remedial work to one of the site's adit systems. Evaluative excavation by staff from Cornwall Archaeological Unit established that this site had been one of those where Mesolithic hunter-gatherers had set up camp, perhaps only for a day or two, to fabricate the hunting tools they would need during a visit to the area. Other examples have been noted by local field walkers in the surrounding area at Boscaswell (Weddle pers. comm.) and at Roscommon (Author's collection).

Neolithic (4000BC to 2500BC)

The Mesolithic was succeeded by a period when the climate was becoming appreciably warmer - the Neolithic (4000BC to 2500BC) – a period of transition and significant change. The Neolithic was marked by the arrival of farming – by the domestication of some animals, and by the deliberate cultivation of food crops. People would still have used the wild landscape as an important resource, hunting animals and gathering wild plants, but farming required families to settle so that they could clear fields, tend their crops and protect their stock – potentially a huge risk. A failed crop or a fatal disease in a

herd or flock would almost certainly guarantee starvation for a farming family where a nomadic group would be able to move to a more favourable area.

However the surpluses that successful crops and stock farming brought allowed families to thrive and expand their holdings, trade with their neighbours and build up capital and wealth. Little direct evidence for these first farms survives, though they are likely to have been on the fertile land of the plateau. The open land of the moors and coast (a far more extensive area than that today) remained a common resource – places essential for herders and graziers where cattle and sheep could be fattened, butter and cheese made, seasonal food crops harvested, fuel gathered and game hunted.

Community markers began to appear in the landscape – sites which not only worked as foci for them, but were also places where the ancestors could be invoked, and places which were often made deliberately visible to indicate that the surrounding landscape was already occupied. Chûn Quoit above Woon Gumpus is a good example of such a site, its location clearly visible from within the area, but also from the surrounding landscape.

Bronze Age (2500BC to 800BC)

The Neolithic was succeeded by another period – the Bronze Age (2500BC to 800BC) – and again, another blurred transition between ways of life took place. Farming had been established as the basis of the way most people lived, and had developed to the point where it could support an expanding population, whilst the continuing warming of the weather allowed the establishment of farms higher and higher up on the open land. There were drawbacks to this expansion, however, since this process ate significantly into the common land, reducing the ability of the local population to balance farming with hunting, greatly reducing its ability to cushion bad harvests or shortages and reducing the extent of the open grazing land. The growing population gradually expanded the cultivated land up on to the West Penwith Moors and out to the edges of the coast, but evidence for most of these fields has, by and large, been lost as a result of agricultural activity during the following 2,500 years.

The need to emphasise community bonds was probably behind the appearance of communal monuments like stone circles, which appeared during the early part of this period, these being almost always sited within the remaining communal areas. Tregeseal stone circle is a good example, set on the flanks of Kenidjack Carn – itself almost certainly an important local ceremonial focus for thousands of years

In addition, this was becoming an increasingly stratified society. Those with the best land or the strongest kin-group must have increasingly dominated the local community and its wealth, and demonstrated it by external show, by the accumulation of valuable personal or kin group possessions, and by extravagant display, rare objects sometimes accompanying the dead into the afterlife.

Of course, the other distinctive major change during this period was the arrival of the knowledge of metals. Here was a material which could be made into almost any shape, which could be fashioned into objects which could be decorative, useful, or used as weapons. Moreover, whilst it was exceptionally difficult to locate the raw materials and to make them into metal, bronze was infinitely recyclable. It was also probably (initially at least) very scarce and valuable. Those with the knowledge of its making, or control over the land on which its raw materials could be found could become powerful, like those who controlled the best agricultural land. The St. Just coast was rich in outcropping lodes of copper and tin, making them both visible and accessible. Tin won from these, or from alluvial or eluvial deposits, was probably worked into ingots for trade to communities all across Britain.

The recently-discovered Beaker Period site at Boscaswell just to the east of Geevor is a rare example of a site which may relate to early industrial activity. Consisting of a stone lined pit accompanied by the remains of a substantial fire, this was probably used as a communal cooking site. Whilst there is no direct evidence to indicate what the early Bronze Age people who created this site were doing at Boscaswell, it is tempting to

suggest that they may have been a prospecting group, searching out and exploiting local mineral lodes.

Iron Age (800BC to AD43)

The Bronze Age was succeeded by the Iron Age (800BC to AD43). Obviously, as the name implies, this period was marked by the introduction of iron as a raw material and technically lasted until the Roman invasion in AD43, though many ways of life would have continued unchanged for centuries after this. Iron was initially so scarce that it was used for jewellery and restricted to the social elite. Everyone else used bronze, just as before. Over time, however, the new material became more readily available and formed the basis for many tools and weapons.

Weapons are one of the key symbols of the period and tell us much about what was happening in society. The massive success of the Neolithic farming revolution had resulted in more or less any scrap of cultivable land being worked, the population was still growing, and some families, clans or kin-groups had achieved far greater control over local resources than others, and were keen to make sure that this remained the case, if necessary by force of arms. A society of haves and have-nots had emerged. However, a long period of post-glacial warming had come to an end. Seasons had become gradually colder and wetter, and farming on the high ground was increasingly untenable, leading to social tension. Elites and figurehead individuals expanded their control over resources through inter-marriage, alliance or war. In all likelihood, West Penwith was too far out of the mainstream for these changes to have much more than a distant impact on the lives of its inhabitants, but nevertheless the local social structure would have echoed that of the wider world. Chûn Castle above Woon Gumpus dates to this period. Even today, this ring fort is a substantial stone monument, but its now tumbled walls would originally have been much taller and more impressive (akin to the cahers found in Ireland), and would have been visible from miles around.

Down on the plateau, a network of stone walled fields would have covered a landscape dotted with groups of farming settlements of round houses, some being relatively plain and small scale – the homes of small farmers, other larger examples marked out those of more prosperous or socially dominant families.

Romano-Cornish Period (AD43 to AD410)

In AD43, the Romans landed in south-east England and stayed for nearly four centuries (until AD410). People tend to believe they got as far as the Tamar and gave Cornwall a miss, though this is not quite accurate. Archaeologists had long known about the Roman fort at Nanstallon near Bodmin, set at the navigable limits of the River Camel. A few years ago, the discovery of a companion fort at Restormel overlooking the upper navigable limits of the Fowey made it plain that the Romans recognised that it was important to control this point where the peninsula could be crossed without having to sail around the treacherous Land's End peninsula. Another new fort has recently been found at Calstock, but the occupation of Cornwall genuinely does not seem to have taken place. Presumably, some form of accommodation with the invaders must have taken place, as in other parts of Europe.

Romano-Cornish life would have been similar to that during the Iron Age. Mining may have continued on a small scale, and a substantial number of farms became defended by enclosing banks and ditches, though by no means all. Fogous like that at Boscaswell seem to be associated with enclosed farmsteads (Rounds), but their functions are a mystery. In West Penwith, a distinctive form of enclosed farmstead (the courtyard house) had appeared, confirming the strong maritime and cultural links which the area had with other parts of the Atlantic seaboard and with the Irish Sea countries where broadly similar farmsteads are found. Whilst the best known examples of this type of farmstead are those at Chysauster and Carn Euny to the north of Penzance, parts of the layout of a courtyard house survive at Boscaswell, whilst the St. Just area has good examples of complex settlements of this type at Nanjulian and Bosullow Trehillys.

Early Medieval Period (AD410 to AD1066)

Around AD400 the Romans were leaving Britain to defend their homeland against waves of tribes moving inexorably westward, these having been displaced over the course of many centuries by incursions of eastern nomads. It was not long before groups of western Europeans including the Saxons were establishing themselves in Britain, at first on the east coast of England, but gradually controlling territories further and further to the west. However place names make it clear that the West Saxon push to the west stopped just to the west of the Tamar.

In West Penwith it's probable that, for most local people, not a lot changed for many centuries. Most people farmed, fished and were perhaps involved in a little mining and trade, just as they always had been. Farm boundaries were stable, each enclosing some of the fertile land on the plateau, some coastland and some moorland, giving rights to open grazing. Round houses and courtyard houses may well have been replaced by ones on a rectangular plan, and the defensive rounds abandoned.

Changes were coming, though, associated with the arrival of a middle-eastern religion, by way of Scotland and Ireland – Christianity. The process of conversion which took place from around AD 600 was probably a top-down process – resulting mostly in changes in belief, but nothing which would greatly change the way people related to the land. St. Helen's Chapel at Cape Cornwall may well have been one of the first sites established by the arriving Christian missionaries.

The Medieval Period (AD1066 to AD1500) and Post-Medieval Period (AD1500 to AD1750)

Broadly speaking, the first major impact on the farmers of West Penwith of the aftermath of the Norman Conquest was a change in to whom you paid your taxes. This had never been one of the rich and desirable areas of Britain, and nothing much changed initially, except that those in ultimate control now spoke French.

Many pre-Norman societies based the division of land following the death of its holder equally amongst the sons of the family. Holdings had tended to become smaller and less economically viable generation on generation, and subsistence farming was the almost inevitable result. However, the Crown now abrogated ownership of all land, and across Cornwall, individual farms were brought together, many ancient boundaries removed and holdings re-assigned to give tenants fair shares of the better, middling and worst land. The fields belonging to medieval farms might well be worked using systems of crop rotation – ley husbandry - involving two to three years of arable cultivation (mainly of oats and rye), followed by four to nine years of grass. On the moors, outfield strip fields like those on the southern slopes of Chûn Downs indicate land which was cropped perhaps only once a generation, and provide evidence for a second phase of farming the uplands, again brought on by a rising agricultural population and resulting land pressure.

The Black Death (Bubonic Plague) reached SW England in summer 1348, ended in 1350 but returned in 1361-64, 1368, 1371-5 and 1390. It killed between 30% and 45% of the British population. The huge population reduction removed the need to cultivate the thin, nutrient-poor soils of the uplands, and the moors were abandoned, the surviving farmers taking up empty lowland farms.

The Medieval Period (AD1066 to AD1540) and the post-Medieval Period from the 15th to the late 18th centuries probably reflected an extended period of stability in the rural landscape, marked by steady improvements in crops and stock breeds, but West Penwith would have remained primarily an area of small-scale farmers whose markets were essentially local. Farmers continued to work with and add to boundaries laid out at least a thousand years before.

During the Medieval period, early miners working the stream gravels in the valleys of the area for alluvial tin had made this area, together with the other uplands of Cornwall and Dartmoor, the principal source of this mineral for Europe as far as the eastern Mediterranean. By the 16th century, the effective exhaustion of this resource had forced these early miners to turn their attention to the lodes of tin and copper outcropping in

the cliffs, and many of the mines of the district would have been worked for the first time during this century. Although there is abundant evidence across the district for early small-scale shallow mining, it was only with the mid-16th century Carbon 14 dating of a timber pump column discovered at Wheal Hermon just to the south of the Cot Valley that the first of these sites could be definitively identified. Others may be amongst the shallow workings found within the Geevor site.

The later 18th century and the 19th century

By the 18th century, most of the tin and copper lodes of the area had been found and worked to some degree. The scale of such working was anything but small-scale, as can be seen from a survey of Ballowall Common, or from aerial photographs of Trewellard Common. Shallow workings underlying Geevor (like those accessible to the public at Wheal Mexico) and Levant both date to this phase of exploitation. Nevertheless, even though adits driven from the foots of the cliffs could help to drain large extents of the lodes by gravity, the best pumps available at the time did not allow working to anything but shallow depths below adit level, and, as local miners soon discovered, most of the richest resources lay deeper still, out under the seabed.

However by the turn of the 19th century, the adoption of technical advances in the mining industry, in particular the increasing use of beam pumping engines, allowed a massive and rapid expansion of individual mines, and of their workforces. Over the half century between the 1780s and the 1830s, the population of the parish of St. Just rose from under 950 to around 12,000. For a rural area whose farms were largely self-subsistent, and whose landscape included large areas of upland and coastal fringes given over to unintensively-farmed rough pasture, the changes within the St. Just district were dramatic and rapid (see Figs 14 to 16).

Mines began to sprawl ever-wider across the landscape, their expansion leading to the creation of sprawling waste dumps, dressing floors, tramways and roadways, stables, carpenters' shops, smithy's, drys, count houses and whims. Much of this activity took place in former rough coastland or coastal farmland.

Mining was, even at its height, a somewhat uncertain business, and continuous employment by no means certain, mines opening and closing on a regular basis. As a result, particularly during the earlier part of the 19th century, many mining families supplemented their incomes by ensuring access to a few acres of ground where they could establish a cottage and lay out a handful of fields where oats, barley or potatoes could be grown and a couple of pigs or a small, hardy cow could be reared. Others took up shares in a fishing boat.

The smallholdings were each self-contained small farms, usually (but not always) including a small self-built cottage and adjoining barns and sheds, probably also a stone-built 'crow' or pigsty; they would have been made up of a mixture of home fields for arable crops and pasture. Their creation was by no means easy as hundreds of tonnes of stone had to be cleared and piled up into walls. After a hard day's work underground, there was still plenty to do when a miner returned home, working with their families to mend walls, weed, feed pigs, or gather furze 'stogs' for fuel. Despite all of this, the smallholdings were essential because they could mean the difference between survival and starvation.

There were other changes in the landscape. As the cultivable formerly open areas of the landscape became increasingly taken up, new ways of living in hamlets or industrial towns began to develop. Planned rows of terraced cottages began to spring up near the mines, some coalescing into hamlets or villages and gaining pubs and other amenities, whilst St. Just grew from a small cluster of farms and a scatter of houses around the church into a bustling new town with its shops, pubs, banks and other facilities. Most of this happened over the course of no more than two or three decades – a building boom which utterly transformed the landscape of St. Just and Pendeen.

For the first time in centuries, the landscape was dynamic and changing. Families came and went, many living for no more than a few years in any one place, before moving to

find work elsewhere, often abroad. Levant and North Levant expanded rapidly, the former spreading across Flintshire Farm, established in the early years of the 19th century and abandoned completely by its end, whilst the fields making up Gever Tenement were increasingly obliterated by the waste dumps, dressing floors and shafts of North Levant.

The 20th century

By the end of the 19th century, the great period of mining in St. Just had reached its end. As mine after mine closed in the face of falling world mineral prices resulting from growing international competition, up to a third of the mining population left to find work; most of its smallholdings had been abandoned to bracken and scrub, and many of its terraced cottages were empty and worthless. It took until the 1960s for the population levels of the parish to again reach the levels found in the 1870s. Levant closed in 1930 after years of low investment and falling returns, doomed by the man-engine disaster in 1919, but Geevor, established at the beginning of the 20th century proved to be surprisingly successful, becoming one of the very few working mines in Cornwall to survive until almost the end of the century.

Although the period of the 2nd World War saw some efforts to cultivate abandoned land, it was not until the 1980s with the arrival of moorland clearance subsidies that major changes in the rural landscape took place. Ancient field systems were swept away and high levels of nutrients applied to what had long been heathy grassland. The grant scheme was short-lived, but its effects were widespread and irreversible. In the 1990s much of West Penwith was declared an Environmentally Sensitive Area on the basis of the survival of so much of its threatened ancient landscape and in response to the threat of its impending loss. Not long after, the designation was extended to cover much of the St. Just landscape, the conservation payments available helping to offset dwindling farm incomes and difficulties in competing in food production with 'efficient' agri-businesses in the rest of Europe. The current Entry level and Higher Level Stewardship schemes continue to encourage best custodianship of the land. The National Trust has taken on the conservation management of much of the local landscape through the purchase of individual coastal farms, and by helping local tenant farmers to use conservation grants to build sustainable farm businesses.

When Cornwall County Council took on the ownership of Geevor in 1992, it was with a commitment to the conservation management not only of its buildings and machinery, but also its surrounding landscape. Extensive grants were secured between 1993 and 2007 to make safe its many mine shafts, tackle significant land contamination issues, conserve its mine buildings and develop Geevor into a heritage site. Geevor was scheduled by the Department of Culture, Media and Sport in 2005 in recognition of its national importance.

3.4 Geevor Mine

3.4.1 History

The only mine in West Cornwall to survive as a working entity almost to the end of the 20th century, Geevor had modest beginnings in a collection of small and ancient enterprises working a cliff exposure and a series of outcrop workings stretching southwards onto Trewellard Hill. As with most mines in Cornwall, the date of Geevor's first working is unknown, and could have taken place at any time between the Bronze Age and the sixteenth century. In all likelihood, the outcropping lodes would have been tried in a small way from time to time from the medieval period onward. Even when mining was documented, very often little more than a name and date have survived, and the small mines that worked at the Geevor site are no exception.

There is documentary evidence that a mine called **While an Giver** was being worked in 1716, whilst by 1765, the strip of land running up from the coast to Trewellard was being worked by **Wheal Mexico**, **Wheal Geavor** and **Stennack** mines, Wheal Mexico working the coastal section, Wheal Geavor the section from the present location of Victory Shaft to the weighbridge and Wheal Stennack a long strip from the present mine café up to the site now occupied by Trewellard Garage and possibly also the Wethered Shaft site. Power

for pumping, winding and dressing would have been supplied by human or animal muscle, or by water-wheels, whilst the dressing floors were located in the valley running through the Geevor site down to the sea, where in the medieval period there had probably been tin streamworks.

Wheal Stennack had already acquired a 20 inch steam engine by 1815, but this was for sale in 1837 with the remainder of the mine equipment. A degree of amalgamation had already taken place by this time, the mine by this time being known as **East Levant**. This closed in 1840. Records of **Trewellard Mine** on the coast between 1841-4 probably relate to some very small scale working on outcropping lodes. In 1849, a working of the combined setts of Wheals **Mexico**, **Stennack an Gever**, **Maitland** and **Game** spanning ground from the sea onto Trewellard Hill was proposed by the "**Great St. Just Tin and Copper Mining Company**", but nothing seems to have been undertaken despite the evident success of Levant nearby.

In the event, it was as **North Levant** (sometimes known as **North Levant and Geevor**) that mining restarted in 1851. The construction of a stamps engine house and dressing floors began in this year and continued throughout the decade. As the re-opening of the mine continued, the adventurers discovered that much of the productive ground had already been taken away down to the 50 fathom level (sea level), and efforts were made to locate un-worked lodes. By 1860 there was already a recognition that development would have to lie seawards, though little work was done in this part of the sett. A new engine shaft was proposed, as was an incline shaft to follow the lodes under the seabed, but this last seems not to have been sunk. Work also continued southwards towards Wheal Bal and Wheal Maitland, and in 1867 the mine was partly flooded when water broke through from their old workings. Wheal Stennack to the south-west was drained in 1867.

In the late 1860s and the early 1870s, the mine facilities were enhanced with a new pumping engine on Laws' Shaft on the old East Levant sett, a new dry, and enlarged dressing floors with steam-powered stamps, these being connected to Laws' Shaft after 1873 by a double track gravity-operated tramway. Through the 1880s the mine expanded southwards into the areas formerly worked by Wheal Bal and Wheal Carne, but due to declining profitability towards the end of the decade, the work could not be sustained, and North Levant closed in 1891.

This was a lean time for mines all over Cornwall, but part of the sett was taken up as **Wheal Geevor** in 1892, and operated in a fairly small way, most of the work consisting of the re-working of levels above adit and the dressing of material from old waste burrows. In 1901 **North Levant (Wheal Geevor)** was mentioned, though this may have been an alternative name for the same operation.

Just after the turn of the century, the sett was taken over by a new syndicate (West Australian Gold Fields Co. Ltd), registering the mine as **North Levant and Geevor Ltd** in 1907. Once again, the sett included the old Wheal Bal sett to the south. Old workings were cleared, shafts re-timbered, and the construction of new dressing floors began, these forming the core of the present Geevor Mill as most of the old North Levant dressing floors had been demolished after the 1891 closure. Though the mine was initially run in a small way, the adventurers' intention was to adopt the best of modern practice, and to undertake continuous but sustainable expansion to develop the full potential of the sett. In 1909 sinking began on a new production shaft - Wethered's, just to the north of the main road, to replace those initially re-used: Roberts' or Old Engine (between the welders' bay and the New Table Section), Pig (just to the south of the weighbridge) and West Carne (on Trewellard Hill).

In 1911 a new company, **Geevor Tin Mines Ltd**., took over the setts of North Levant, Geevor and Wheal Carne, and continued the developments initiated by the former company. Expansion soon followed. Much of the dressing plant remained initially unchanged, but an electric hoist was installed at Wethered Shaft and ore was sent to the stamps and dressing floors downslope along a new tramway, having been passed

through a crusher station near Ladderway Shaft. Extensive remodelling of the mill was set in hand during 1912.

The war years were a period of labour shortages for all but the most essential national undertakings, and curtailed shaft sinking, but expansion followed the cessation of hostilities. A new crusher station at Wethered Shaft feeding an aerial ropeway replaced the former tramroad in 1919. Downslope, work was in hand to double the capacity of the mill; transformers were installed to connect the mine to Hayle power station, and new engineers' and smiths' workshops, stabling and stores were built.

Victory Shaft was begun in 1918 and named in 1919 to develop the seaward extensions of the lodes, moving the focus of the mine away from Wethered Shaft to the head of the mill. Mining was briefly suspended during the slump of 1921, but work soon resumed with further development of the new shaft and its infrastructure; by 1923 the Victory Shaft winding engine was in service and the mine work force had expanded to over 400. The mine was also the site of pioneering experiments in the dressing of low grade ores, initially using the chloridisation process and subsequently a process based on sulphide conversion.

A closure of the mine during 1931 was relatively short-lived, though de-watering took from January to June in the following year. Levant had not survived the depression in the industry, however, and its sett was acquired a couple of years later. Investment in new plant during the 1930s seems to have been minimal - Wethered Shaft was virtually unused, and the majority of development was concentrated on Victory Shaft. The mine continued to enlarge during this period, the former Pendeen Consols (including Boscaswell Downs mine) being acquired in 1937. At the end of the decade the mill was substantially reorganised and rebuilt, many of the buildings constructed during this period forming the basis for the core of the present mill layout.

During World War II, the mine once again experienced labour shortages, low tin prices and rising operating costs. Graham Sutherland, commissioned as an official war artist, spent time underground at Geevor during 1942 recording working conditions, the results of his work (Darkness and Light) being exhibited at Penlee House Museum in 2013. Experiments with sink/float processes helped to improve tin recovery, whilst reductions in operating overheads were brought about in 1944 by the abandonment of the overhead ropeway from Wethered Shaft and the hoisting of all ore through Victory Shaft. During the war, electric locos and muckers were introduced. Shaft sinking was, however, suspended between 1944 and 1951.

The 1950s saw another period of re-equipping and expansion, with the installation of electric winding plant and the construction of a new steel headframe. Further improvements to the mill included the enlargement of the flotation section and the installation of hydrocyclones. In the following decade a prototype Heavy Medium Separation (HMS) unit was installed and following the success of the trials, a Wemco HMS plant was installed in a new building to the west of the mill in 1964. On the slimes floors, prototype Mozley multi-deck concentration tables were installed in 1966. Recovery rates apparently increased so dramatically that within a year the Rescorla's works on the cliffs to the north (which had for many years recovered tin from the Geevor tailings) was closed down for want of economically recoverable material in the tailings stream. The vanners, which had served as the basis for concentration in the mill since 1908, were finally scrapped and replaced with Holmans' sand and slimes tables between 1967 and 1969, greatly improving recovery. Possibly the most important innovation, however, was the Jones wet magnetic separator installed on the remodelled tin floors. The 1960s also saw the discovery and development of the Simms Lode in the eastern part of the sett, this becoming a significant source of ore through to the 1980s, greatly assisting in keeping the mine productive during this period.

Elsewhere at surface a new engineering workshop was constructed next to the old steam winder building and work on new mine offices begun. Other new facilities included a mine rescue room and a first aid room, these being incorporated into the new steam winder house.

Underground, it was felt that the existing inland section of the sett was close to being bottomed, and in 1961 the first attempts to seal the breach in the 40 backs at Levant began. Two years later, preparations began for the un-watering of the old Boscaswell Downs sett. Work on this project continued over the following two years, and Treweek's Shaft was rehabilitated in 1965 in preparation for the re-working of this old, rich and extensive sett. At Levant, the complex engineering works associated with the sealing of the seabed breach were finally successful in 1966, and winding plant and other services were installed next to the shaft. In 1971 the old transformer house was converted into the mine store (new substations being constructed around this time), a salvage yard was established to the south of the compressor house to recycle useable materials and a new mill maintenance workshop was constructed, as were a new parts store, a welding bay and a mine garage. New crushing and screening plant were installed in the mill, together with X-ray fluorescence and Gamma ray absorption analysis equipment to monitor the performance of the milling circuit.

Underground, the most important development was the beginning of the driving of the sub-decline from Victory Shaft 15 level out under the Levant workings in 1975. This was eventually cut to the 21 level (by 1980) and expanded the workable area of the mine enormously, giving access to the fully drained lower levels of Levant mine.

During this period, the redundant Wethered Shaft site was gradually converted into a tourist facility, the old transformer house being converted into a museum and minerals gallery, the old winder house into a museum and visitor centre. The old miners' dry became a social club and mine shop, whilst the stable/candle store was converted into a cottage. The Levant mine office was re-sited within this complex as a visitor café, but a planned conversion of the smith's shop was never completed. The surface and underground tours initiated during the late 1970s were found to be a resounding success and provided the mine with a useful additional source of income.

The 1980s began optimistically with further expansion plans. Exploration continued on new submarine levels, whilst plans for a further decline cut from the Geevor site out to the untouched ground beneath Botallack and West Wheal Owles were preceded by the refurbishment of Allen's Shaft. The mill was substantially expanded in 1980 by the addition of a new tabling and flotation section capable of handling a much increased throughput and other work was undertaken to improve and modernise the plant; it was planned to eventually replace all of the old mill buildings. Residual minerals were being won from old mine burrows across most of the former St. Just Mining District, virtually keeping the new mill in full operation.

Then, on October 24th, 1985, dealings in tin were suspended on the London Metal Exchange when the International Tin Council announced that it could no longer fund its attempts to maintain the world price above £8,500 a tonne. The Buffer Stock Manager was thought to have forward positions on at least 68,000 tonnes of tin at prices over £9,000 a tonne, a liability of over £1 Billion, and there were also a large number of arrangements with brokers for tin sales on the promise of re-purchase at set rates in the future. In short, the ITC had run out of funds to maintain an artificially high price at a time when reserve stocks were continuing to come onto the market. Chaos ensued and tin dealing was suspended. Within a fortnight half Malaysia's tin producers had closed down; in Thailand 14 mines shut immediately and 34 were put onto care and maintenance. In Cornwall, RTZ asked for £50 million in government aid to keep Wheal Jane, Mount Wellington and South Crofty intact. Geevor, too, applied for a grant in the spring of 1986 to continue the mine's development plans and to place it on a firm footing for the future. In June, this grant was refused and the mine was placed on care and maintenance. Most of the workforce was laid off and final closure within a matter of months seemed inevitable. The price of tin on the world market continued its downward slide, slipping to around £3,000 a tonne.

Geevor mine ceased development and production work in April 1986 and most of the workforce was made redundant, a small number being retained to keep the mine on a care and maintenance footing. A further application for capital funding to reduce operating costs was rejected in June 1986, but from November onwards 44,000 tonnes

of broken ore were trammed out. Effectively the mine was being stripped of its working reserves. Through 1986 and 1987 miners marched in the streets, sent delegations to Westminster, and public collections were held to try and alleviate the desperate effects of the tin crash on West Cornwall. In January 1988 underground work re-commenced with a small workforce and Geevor was put back into production on a limited basis (most of this again being the stripping of lode pillars and the emptying of stope fills). The underground and surface tours were reinstated. Underground, activity continued through the financial year 1988-89, but the tin price was unstable - rising to over £6000 a tonne and then dropping back to below £3000. Falling prices in the autumn of 1989 inevitably resulted in the suspension of development, and on 16th February 1990 the remaining miners were laid off and the mine was again placed on care and maintenance. Tourism continued, but the mill remained silent and at the end of August 1991, the tourist facility was closed down, salvageable materials were recovered from underground, the pumps were turned off and the mine began to fill with water. By August 1993 the water had reached 10 level in Victory Shaft and the lowest 1000 feet of the mine was flooded.

From late 1991 through 1992 Geevor Plc sold their assets (plant, equipment, land and buildings) to cover their debts, prior to quitting the site for good. The scrapmen moved in. On the advice of Cornwall Archaeological Unit, English Heritage and the Trevithick Society, the National Heritage Memorial Fund approved a grant towards the purchase of key components of the surface plant, and in the autumn of 1992, Geevor Mine was purchased by Cornwall County Council with the intention of turning it into an open air museum of Cornish Mining. The work of securing the site and establishing a tourist amenity was begun almost immediately by a small group of volunteers and in August 1993 Geevor reopened as a tourist mine.

Large-scale programmes of safety works funded through Derelict Land Grants (DLG) and subsequently by the Land Reclamation Fund followed to make the site (including portions of early underground workings) safe for visitors, whilst similarly funded consolidation works arrested the deterioration of historic structures on and bordering the site. Funding from Cornwall County Council allowed the conversion of the former mine stores into a much-needed shop and café, whilst work by volunteers and site staff permitted the renovation of key structures and equipment on the site and the creation of new displays. In October 2001 Pendeen Community Heritage (PCH) succeeded in gaining an initial three year contract for the management of Geevor, this subsequently being renewed and extended.

Grants from the Heritage Lottery Fund in 2001 and 2007 funded the conservation of most of the buildings on the site, and the construction of a new, purpose-built museum within the former Top Fitting Shop, as well as establishing trails linking the site with Levant. In 2010/11, the extent of the visitor tour established within the former Wheal Mexico shallow adit system was virtually doubled in length through the re-excavation and stabilisation of sections of a backfilled stope and a drive.

3.4.2 Technology

The buildings and equipment at Geevor (both those that survive, and those which were formerly found on the site) are a unique resource through which the story of 20th century hard rock mining in Cornwall can be told. From its inception, earlier power sources and mining equipment were, with the exception of the steam winding engine at Victory Shaft, eschewed in favour of new technologies in the 20th century working of Geevor Mine. Electric power was adopted almost universally from the outset (Fig 65) and compressed air was used very extensively (Fig 68); the original pneumatic stamps were quickly replaced with powerful crushers and ball mills, buddles were replaced by Frue vanners and then by shaking tables fed by classifiers (Fig 78), froth flotation was adopted early in the history of the mine (Fig 83), and the magnetic separator installed on the tin floors (Fig 81) was also a relatively early example of this type of plant, as was the heavy media separation equipment. Geevor sited pioneering experiments in low grade ore recovery including those based on chloridisation and sulphide conversion during its early years, whilst its slime plant contains the prototypes for the Mozley multi-deck separation tables subsequently widely used for the treatment of fine low grade tin ore (Figs 87-88).

The site as a whole was characterised by an evolutionary approach to its operation, the mill complex, in particular, featuring significant phases of reorganisation during almost every decade between the 1920s and the 1980s. It was this, more than anything else, which ensured Geevor's survival during periods when almost all other contemporary mines went to the wall. In the end, it was external factors beyond the control of the mine management (the 1985 Tin Crash) rather than failures to plan, adapt, expand and re-equip which sealed the fate of the mine, as is evident in the stalled plans to drive a new decline out under Botallack in order to exploit the deep unworked reserves of the abandoned mines of that part of the St. Just mining district. If these proposals had been realised, much of the mill complex would have been demolished, to be replaced with a large, purpose built structure capable of operating for decades into the future.

3.4.3 Community

As a major local employer throughout most of the 20th century, Geevor has played a particularly important role within the local community, its existence to a degree cushioning the massive decline in employment opportunities which resulted from the almost total closure of all the local mines by the last decade of the 19th century. Geevor's establishment in the early years of the 20th century must have significantly reduced levels of local emigration, sustaining local communities through periods when alternative sources of employment within this area remained exceptionally limited. Community identity was also sustained as a result, as was the longstanding tradition of hard rock mining within the St. Just district.

The closure of the mine in the late 1980s was particularly hard felt, therefore, given the almost complete absence of other forms of work for local men, and deep concerns were voiced about the loss of local identity which it was thought would result. Many small local businesses closed, whilst younger miners were forced either to leave their families to seek work abroad or to take up alternative, less well paid and less prestigious work locally. Local house prices became depressed relative to those elsewhere in Cornwall. The 1987 reopening was short lived, and did little to reverse those negative effects.

Proposals to reopen Geevor as a heritage site in 1992 were, therefore, viewed with considerable ambivalence in the district, and there was a strong feeling that the whole site should be levelled and made available for the siting of an industrial estate, which might, at least, offer some jobs for local people.

Nevertheless, on the whole attitudes have now changed, in no small part owing to the appointment of a locally-based charitable trust to run the site, and whilst Geevor is no longer the economic mainstay of the local economy, its physical presence, the jobs it offers to local people and the interest shown in its history by visitors has helped to no small degree to maintain a distinctive local identity.

Geevor is also important to the wider community of Cornwall, this being marked by the purchase of the site by Cornwall County Council in 1992, in recognition of the literally unique opportunity this presented to celebrate and explain the history of Cornish mining on an intact site to future generations of Cornish people, as well as to visitors. That this was a wise decision is underscored by the fact that virtually all of the mine buildings at Wheal Jane and South Crofty have been completely demolished, and Geevor is now the **only** surviving full-scale 20th century tin mine in Europe.

3.5 Site assessment

Desk based assessment

Much of the material utilised in understanding the asset represented by Geevor Mine was collated during studies carried out immediately following its acquisition by Cornwall County Council in 1992, and summarised in the first iteration of the Conservation Management Plan for the site produced by PLB Consulting in 2002. This has been reviewed and updated, taking into account the results of subsequent specialist studies of the site, reports on works undertaken on and surrounding the site, the learning, accessibility, outreach and interpretation plans for the site drawn up by PCH and the

contextual material produced during the submission of the bid for the Cornish Mining World Heritage Site. A full list of sources consulted can be found in Section 10 of this report.

Fieldwork

The detailed maps used for site recording were produced from the Ordnance Survey MasterMap Digital Mapping, these being overlain with information derived from historic maps and plans, and with data derived from GIS shapefiles curated by Cornwall Council and by Historic Environment Cornwall Council.

Site visits were undertaken throughout late 2013 and early 2014, the majority of the record photography being undertaken in November 2013. The field recording was based on a mixture of digital photography and site notes. Discussions with individual site staff were undertaken throughout the survey period.

A condition survey was also undertaken utilising both written notes and high resolution digital photography. Discussions with site staff flagged up a number of issues which had not been noted during the walkover survey.

3.5.1 CMP area

Figure 2 shows the Conservation Management Plan study area. In order to allow this report to be read in conjunction with the 2002 CMP, the site has again been divided into five zones (see Figs 23 and 102). Zone A covers the Wethered Shaft complex, Zone B the area including the land to the east and north of the weighbridge and the car and coach park, Zone C the core of the site, including most of its buildings, Zone D the site of the former gravel stockpile between the mill and Lower Boscaswell, and Zone E the open area of the site between the tin floors and the cliffs at Trewellard Bottoms. The 2002 CMP allocated Zone F to the area of Levant mine owned by Cornwall Council. It is not felt appropriate to include this area within the present Plan, given the very different history and management practices applying to this part of the site.

To avoid confusion when comparing the 2002 and 2014 CMPs, the list of individual components utilised in the 2002 CMP has also been retained. Feature sheets describing each component in detail are included within Volume 2 of this Plan, whilst a summary inventory list forms Appendix 1 of this volume.

3.5.2 General summary of site phasing

The date of construction of the water stamps on the cliffs is unknown, but these are probably of late 19th century date, as is also the Rescorla's return water pumping house chimney.

The miners who first established Geevor in 1907 clearly refurbished the 1857 count house and old stables, and may have reused other buildings inherited from the defunct North Levant, including the old stamps engine house, the carpenters' shop and some elements of the dressing floors, though it is likely that the majority of their superstructures had been dismantled. The *circa* 1907 Ordnance Survey mapping shows a fairly empty site, with the majority of the dressing floors open to the air.

The cores of some of the buildings making up the Wethered Shaft complex date from 1911 when the winder/compressor house was constructed; some of the stone and timber buildings making up the lowest part of the mill near the western calciner may also date to this period of construction, the calciner being built in 1912/3 and its partner to the east in 1919. The old assay hut dates to 1908/12. The mine power house (mine shop) dates to 1918, whilst the sample house is broadly contemporary.

With the commencement of the sinking of Victory Shaft in 1918, new buildings would have appeared in its vicinity (including the now demolished original winder and compressor house, Fig 28), and expansion of the mill would have taken place (see Fig 101 for locations of mill areas). The Middle Table house and Third Floor buildings probably date to this period (Fig 32), as do the drill shop and the slimes plant. The original count house extensions were also constructed around this time.

The Stokes re-organisation of the mill was undertaken during the late 1930s, the most obvious buildings belonging to this period being the concrete-constructed ore bins adjacent to Victory Shaft and the crushing and picking belt building, though the dynamite store (and now-lost detonator store nearby) to the east of the weighbridge were also built during this period, as were the thickeners, the top pond and the union hut. The slimes plant was roofed at this time.

The 1950s saw the replacement of the Victory Shaft headframe, the construction of the Victory Shaft winder complex and the construction of the compressor house.

Another reorganisation of the site during the 1960s led to the construction of the HMS plant and the new tin floors, together with the sulphide bays which form the basis of the mine garage, the dry, sawmill and sawdust store, the mine substation, the Top Fitting Shop and the final extensions to the mine office.

The Bottom Fitting Shop (mill fitting shop) was added in the mid-1970s, a period when considerable modifications were made to buildings within the Wethered Shaft complex during its conversion to a tourist facility, the weighbridge (associated with gravel sales) was constructed, as were the welding shop, the return water tanks, the Sheepbridge crusher and the new stores (now the mine café).

The final phase of building during the operational period of the mine took place in 1979/1980 with the building of the New Table Section and the Newell-Dunsford mill building, together with the new ore bins. The visitor toilets by the car park date to the mid 1990s. Some elements of the site were demolished during the mid 1990s, these including the superstructures to the ore bins, most of the conveyors and some small-scale buildings.

3.6 Feature documentation

In order that the future management of the Geevor site into the future is carried out in a fully sustainable fashion appropriate to its Scheduled status and its unique nature, it is particularly important that its significant assets are fully understood, that all work carried out on the site reflects that importance, that it is undertaken within frameworks set out under the relevant controlling legislation, and that it is fully documented.

To that end, feature sheets have been created for each site component, each providing a brief history and description of the feature, its location, condition and importance, together with any significant contents, fittings and machinery/equipment, condition and any requirement for works (Volume 2, see also Appendix 1).

Additionally, pro-forma works record sheets have been produced (sample in Volume 2). These will be filled in on each occasion that works are undertaken to buildings or equipment, detailing the nature of the works, the materials used and the dates on which the works were carried out.

3.7 Site management

The Geevor Mine site was purchased from its original owners by Cornwall County Council as a series of parcels between 1992 and 1998, the Wethered Shaft site being the last of these. It was originally developed and operated by the Council with assistance from locally drawn volunteers, many of which had been former employees of the mine. Responsibility for day to day operation of the heritage site passed to the Trevithick Trust in 1994, this being succeeded by Pendeen Community Heritage in 2001, the Trust being given a three year management agreement with Cornwall County Council, but operating under a Tenancy At Will from 2004 until 2013. A new management agreement was awarded in March 2014 to run for an initial period of three years which, at the discretion of the Council, may be extended for further periods of no less than twelve months, with a maximum extension of seven years. Cornwall Council currently makes an annual grant of £76K towards the costs of operating the site and holds the maintenance budget for the site. The value of this is currently between £20K and £25K per annum.

Pendeen Community Heritage (PCH) is a Registered Charity (1087755) established in 2000 with three purposes:

- The conservation of the unique heritage of Geevor;
- The use of the site for all forms of education;
- The creation of sustainable employment.

PCH's strategic objectives are listed as follows:

- preserve the heritage of the mining site;
- offer a high quality experience to visitors;
- market the attraction to increase visitor numbers and revenue;
- operate safely and legally;
- ensure a partnership approach to the development of the site based on the completed Conservation Management Plan;
- create sustainable employment;
- be of significant economic value to the local community and contribute to local economic regeneration;
- become the centrepiece of the Penwith section of the World Heritage Site area.

Their operational objectives state that PCH will:

- renew, develop and enhance the physical condition and appearance of the site;
- enhance the quality of the visitor experience through high quality interpretation;
- improve the stock in the shop and increase sales to generate working capital for the site;
- develop museological, educational and academic work so that Geevor is a quality provider to all sectors of education;
- target marketing to widen the client base and increase visitor numbers and income;
- train and recruit staff to provide services to visitors of the highest standard;
- establish local partnerships to enhance the value of the site to the community;
- investigate further sources of funding for capital investment and revenue support.

The operational contract between Cornwall Council and Pendeen Community Heritage requires the provision of services to result in the following outcomes (the Principles of the Service):

i) full compliance with all Regulations, such as the HMI Inspectorate MASHAM Regulations 1993 (Management and Administration of Safety and Health at Mines) has been maintained
ii) Geevor Tin Mine is a thriving, high quality visitor attraction and one of a small number of Cornish Mining World Heritage Site 'Key Sites'
iii) Geevor Tin Mine is more financially sustainable through developing a stronger mixed economy funding model
iv) the site and collections continue to be safeguarded through the implementation of: the revised Conservation Management Plan; the Collections Management Plan; the Repair, Maintenance and Replacement Obligations; the Annual Management Plan; and the Planned Maintenance Programme
v) the Museum at Geevor Tin Mine gains Full Accreditation status within 2 years of the Contract Commencement Date

Pendeen Community Heritage currently employ 24 staff on site and have a volunteer team of around 16, mostly working on archive cataloguing, though some are engaged in the conservation of machinery, including locos and rocker shovels.

The permanent staff work under the direction of the Mine Manager (Mike Simpson) and consist of a Curator, Finance Manager, Reception Manager (plus assistant), Retail Manager (plus assistant), Learning Manager (and two Learning Development Officers), Marketing Manager and Operations Deputy Manager. One member of staff is responsible for IT matters and PCH also employ a Groundsman and a cleaner. Visitors are shown round the site by the Head Guide and a team of seven Guides, two of whom are former Geevor miners. This team also undertake small scale maintenance works on site.

3.8 Visitors and audience

Geevor is open all year. Visitor numbers fluctuate throughout the year, rising to a peak in July/August, though with reasonable shouldering between April and June and again between September and October. Visitor numbers rose fairly steadily from the 16,629 recorded for 1994 (the first year of opening), averaging around 20,000 until 2001. The numbers rose appreciable following the takeover of the site management by PCH in 2001, rising from the low 30,000s in 2002 to nearly 40,000 in 2006. The peak year to date was 2009 (nearly 42,000), since when the effects of the recession have seen numbers drop back to between the mid and the high 30,000s. As an attraction, Geevor is somewhat subject to the vagaries of the weather, extended periods of fine sunny weather during the peak months drawing potential visitors to Cornwall's beaches, rather than partly undercover sites such as this. Nevertheless, the opportunity for visitors to go underground is a very strong draw for the site.

In 2010/11 there were 37,217 visitors to Geevor, 3,855 of these being educational visits. In 2011/12 the total was 36,931, 3,908 of these being educational visits, whilst in 2012/13 the figures were 34,081 and 3,986 respectively. Most of the schools' visits were from Cornwall for the educational workshops it hosts, these including 'Light and Dark', 'Machine Makers', 'Hard Rock Challenge' and 'Mining History', though Geevor has also hosted school visits from other areas of the UK, as well as France, Germany, Belgium and the Netherlands. There have also been several visits by UK universities. Many of the general visits were made by family groups and Geevor operates a Gift Aid scheme which gives the benefit of free repeat visits throughout the remainder of the year of the initial visit. The recently developed Hard Rock Museum was specifically designed with family groups in mind.

The high quality and attractiveness of the site has led to it winning a number of tourism awards: in 2011 Geevor won a Silver Cornwall Tourism Award and a Bronze Award in the South West Tourism Excellence Awards. In 2012 Geevor was awarded a Quality Badge by the Council for learning outside the classroom, won the Sandford Award from the Heritage Education Trust in recognition of its outstanding contribution to heritage education and learning within the historic environment, a Silver Award in the Cornwall Tourism Awards and Highly Commended within the South West Tourism Excellence Awards. In 2013/14, Geevor was awarded Gold for the best art, museum and maritime attraction, Silver for the best historic property and country house and Winner of Winners at the South West Tourism Awards. Geevor will represent Cornwall in the 2014 International Visit England Awards.

3.9 The ecological context

Methodology

Initial assessments of some aspects of the ecology of the Geevor site were carried out in 1993 by Environmental Consultants (CWT), these including a general assessment of the ecology of the site and proposals for the revegetation of a number of severely contaminated areas. An invertebrate survey was carried out in 1999 by Spalding Associates, this being repeated in 2007. The ecology of the Wethered Shaft site was

surveyed in 1999 and a bryophyte survey of the wider site was undertaken by Holyoak in 2000.

A further series of ecological surveys were carried out by Spalding Associates in 2006/7, these comprising a habitat survey, a bat survey, a survey of the site buildings, and the potential of the site for both birds and mammals. A further review of the ecology of the site was undertaken as part of this CMP Review during 2013/14.

Collectively, these surveys provide a suitable level of information required to assess the ecological significance of the site, to monitor change, and to make appropriate recommendations for the management of this aspect of the site.

Summary

The site is on an exposed coastal location on the south-western peninsula; it extends over rocky sea cliff and cliff top, and inland over sloping land that rises toward the higher West Penwith moors. The cliff tops are low, at little more than 100 metres above sea level, and the sloping ground has a largely north-westerly aspect. Large amounts of salts in sea spray are blown onto the cliff tops by the prevailing south west winds and air humidity is kept relatively high by the proximity of the sea. The surface topography has been extensively altered during the mining and post-mining history of the site; there are many industrial buildings across the site and the more contaminated ground that remained after the closure of the mining activity at Geevor has been covered by large amounts of gravel structures for reasons of public safety.

The following habitats at Geevor Mine are important for nature conservation (see Figure 101 for locations and extents):

- Heathland (coastal and lowland)
- Coastal grasslands and maritime cliff, crevice and ledge habitat
- Calaminarian grasslands and heath on contaminated ground
- Lowland dry acid grassland
- Bare soils and spoil (contaminated soils)
- Cornish hedges (stone faced vegetated bank)
- Ponds and damp habitat
- Mine buildings
- Scrub

Also of importance at Geevor Mine is the value to a range of species of having a mosaic of these habitats. Additionally the post industrial areas of the site are likely to be classified as a new BAP priority habitat known as open mosaic habitats on previously developed land.

Although no rare or protected species of vascular plant were found on the site there are a number of species that are noteworthy: the Nationally Scarce Hairy Bird's-foot Trefoil *Lotus subbiflorus* occurs in open habitat at a track side at the Geevor complex; the declining arable plant Corn Spurrey *Spergularia arvensis* occurs in the neglected fields in small numbers; the native Bluebell *Hyacinthoides non-scripta,* which the UK has a special responsibility for since 25% of its global population occurs here, is scattered through the neglected fields under Bracken and scrub; the distinctive prostrate form of Dyer's Greenweed *Genista tinctoria* ssp *littoralis,* restricted to the cliffs of Cornwall, is locally frequent in the cliff top grasslands at Levant; and the Southern Marsh Orchid *Dactylorhiza praetermissa*, though a widespread and common orchid species, is associated with the grasslands growing on contaminated ground near the Geevor main complex.

There are a number of non-native vascular plant species occurring on the site; some of these species are potentially damaging to the biodiversity interest of the site because they have the capacity to increase vigorously and replace native species, becoming invasive pest species, most notably Japanese Knotweed *Fallopia japonica,* but also Butterfly-bush *Buddleia davidi,* Cotoneaster *Cotoneaster sp,* Montbretia *Crocosmia x*

crocosmoides, Japanese Rose *Rosa rugosa* and Russian Comfrey *Symphytum x uplandicum.*

4 Statement of significance

This section examines and assesses the significance of the Geevor site. It considers not only the significance of the site and its constituent components, including its archives and collections, but also those arising from its designations, and its wider relationships, including those with the Cornish Mining World Heritage Site, the surrounding landscape, and the local community.

4.1 Methodology

This assessment of significance has been prepared on the basis of the information considered during the process of understanding the asset (above), and considered within contexts ranging from the international through to the local. Within this management plan, assessments of significance have been generated against nationally agreed criteria for such assessments and in relation to the basis on which a variety of heritage and other designations are considered.

These statements of significance have been discussed with and agreed by a range of key stakeholders in the Geevor site as part of a consultation event. This group included those representing:

- Pendeen Community Heritage
- Cornwall Council
- The Cornish Mining World Heritage Site
- The Cornwall AONB
- English Heritage
- St. Just Town Council
- The National Trust

4.2 Statements of Significance

Geevor Mine is now unique in Cornwall – the only intact example of a large 20th century tin mine and one which retains almost all of its original machinery, equipment, artefacts and archives. Much of the equipment and machinery at Geevor Mine is now either very rare or unique and is nationally significant. The site is a Scheduled Monument, a Key Centre within the Cornish Mining World Heritage Site and the most extensive industrial heritage interpretation site in Cornwall, set in a dramatic landscape which is rich in important historical and archaeological features as well as ecological habitats. For almost the whole of the 20th century Geevor was the social and economic heart of the local community, and is still a significant local employer. The site has the potential for further enhancement, for providing further employment opportunities and for the diversification of the ways in which it can generate income.

Significance of Geevor to the World Heritage Site

Geevor Mine is a key component of the Cornish Mine World Heritage Site, and has Outstanding Universal Value as the largest and most complete 20th century mine complex within it. Although much of the later development of the site falls outside the core period for which the WHS was inscribed (1700-1914), the Geevor site as a whole exemplifies the underlying processes by which Cornish Mining technology evolved and was applied in a practical fashion.

Geevor Mine represents the most complete mine site in West Cornwall, and the only one to retain a full range of buildings and machinery which demonstrate the evolution of mining technology from the 19th century into the 20th century. All aspects of mining activity are represented on the site, including ore and waste haulage and storage, the

use of water, steam, compressed air and electricity for power supply, ore processing, and infrastructure.

There are only a very small number of sites within and surrounding the World Heritage Site which contain significant assemblages of mining equipment. King Edward Mine was built in order to provide training facilities for students at Camborne School of Mines, Levant, together with East Pool and Agar retain beam engines utilised for pumping and winding, Tolgus Tin (outside the WHS) retains a considerable amount of ore dressing equipment, some of which is operational, whilst Blue Hills Tin Streams has been created using original equipment. Wheal Jane, Mount Wellington and South Crofty have all been demolished in the last few years and Geevor alone represents a formerly large scale operational mine retaining the majority of its equipment.

The Geevor site lies within the St. Just Mining District (Area A1), near the heart of a dense concentration of formerly important mining operations including Levant, Botallack and Wheal Owles and of concentrations of water-powered dressing sites from the Portheras Valley to the north east of the site to the Kenidjack and Cot Valleys to its south west.

The Outstanding Universal Value statement for WHS Area A1 states: '*The survival of the mining landscape is particularly good within this Area. Mines stand cheek by jowl along the coastal fringe; many working under the sea (a distinctive element of OUV within this Area), their engine houses are often perched on the cliffs or set only a little way back from it. Within the cliffs are ancient workings and adits, whilst on the cliffslopes are often leats leading to valleys crammed with water powered stamping sites. The mining landscape is particularly well-represented between Geevor and the Cot Valley, this taking in the western half of the coastal part of the Area. The majority of these structures have been conserved over the past decade, whilst* ***Geevor is a very rare example of a conserved and almost wholly intact 20th century mine****. The working beam engine at Levant is also a rare survivor, whilst tin dressing sites and arsenic works at Botallack, Levant and Kenidjack greatly increase the Area's OUV. There are also engine houses and other buildings at Watch Croft and Ding Dong, set high up on the moors amongst ancient outcrop workings and streamworks, whilst more fragmentary sites exist throughout the remainder of the coastal section of the Area. The major valleys of the area have good surviving evidence for water powered tin stamps and associated dressing floors, many of these having been conserved by the National Trust. Count houses are particularly well-represented within this Area.'*

National significance

The western Brunton calciner on the Geevor mine site (Fig 56) was designated a Scheduled Monument in 1992 on account of its rarity (being one of only two structures of this type within Britain which still retain all of their internal components) whilst the Wethered Shaft headframe (Figs 24 to 26) was Listed at Grade II in 1995, again because of the rarity of survival of this type of structure. A re-assessment of the Geevor site saw the whole of the core area of the site designated as a Scheduled Monument in 2005 as National Monument Number 1021361 (see Fig 21).

Some structures have been excluded from the Scheduling in recognition of their current uses, or taking into account proposals for conversion or adaptive re-use at the time of Scheduling. These comprise the following:

- The old power house and New Store (the present mine shop and café).
- The office and count house complex.
- The mine garage (leased as a metal fabrication workshop).
- The Top Fitting Shop (now siting the Hard Rock Museum).
- The Bottom Fitting Shop (housing the Holmans' Collection display).

Note: the ground beneath all of these structures is included within the Schedule.

- All structures making up the Wethered Shaft complex.

- All post-closure road surfaces, footbridges, fences, gates and stiles, safety equipment, benches, bins, modern services, signs, information boards and exhibits.

All of the major buildings on the core part of the site (excepting those detailed above), whatever their period of construction, are components of the Scheduled Monument given the contributions they make both individually and collectively (their group value) to our understanding of 20th century hard rock mining in Cornwall. This designation extends to their fixtures, fittings and contents, as well as to the mine workings which underlie the Scheduled area. The Geevor complex is of the highest integrity with an exceptional group value that illustrates, in an authentic fashion, all key aspects of the 20th century Cornish hard rock mining industry.

Original in-situ machinery

For examples see Figures 29, 47, 65-68, 70-72, 77-88).

One particularly important component of the site consists of its collection of original machinery and equipment, almost all of which remains within the structures within which it was originally installed. Much of this equipment is either very rare or unique. All components are Scheduled and the majority was purchased for the nation using a grant from the National Heritage Memorial Fund.

This collection includes electric and steam powered winding engines, three large electrically-powered compressors, their pipework and air tanks, the mine sawmill, the contents of the mine substation, the contents of the mine assay house, the primary crusher, a large number and range of shaking tables, several hydrosizers and classifiers, froth flotation cells (including two very early examples), ball mills, rake classifiers, pumps, the magnetic separator and concentrate driers, together with their surviving pipework, launders and cabling. The slimes plant contains further sand and slimes tables, as well as pioneering examples of dressing equipment designed to handle very fine particle material, including prototype and production Mozley multi-deck tables and a pair of Bartle's' cross-belt separators.

Artefacts

For examples see Figures 43, 69-70, 73-76.

A Collections Management Plan for Geevor was produced in 2004 and reviewed in 2009 and 2014. As well as containing policies for acquisitions, loans, gifts and bequests and the disposal of unwanted artefacts, this document divides the artefacts relating to the site into museum artefacts, the working collection and the handling collection, with guidelines for each.

As well as the larger fixed machinery, the site also contains a wide range of artefacts, the majority of which are original to the operation of the mine. It should be noted that these also form part of the Scheduled Monument. This collection include electric locos, ore wagons and fixed trackwork, locomotive and personal battery chargers, a range of compressed air drills with their maintenance equipment and spares, a wide range of equipment and spares in stores buildings, this including pumps, screens, equipment parts and maintenance materials. The site also holds a large collection of other artefacts, including personal tools and equipment, and materials and tools used for maintenance work, both above and below ground. The shaft remains fully furnished down to 3rd Level adit, the fittings including the pumping main, air main, power and telephone cables, ladderway, cage/skip guides (buntons) and shaft setts with their associated bratticing.

Possibly unique within Cornwall is the large-scale mine model housed within the reception building, this having been constructed during the later development of the mine to enable the mine management team to visualise the extent of work already undertaken underground within the surrounding mining district and to determine the potential for the expansion of Geevor into un-exploited ore bodies.

The Geevor site also contains a range of artefacts which were acquired by the mine when it set up its original museum and heritage facilities during the 1970s, as well as those

donated or loaned to the site subsequently. These include a particularly fine (potentially operational) model of a set of pneumatic stamps feeding shaking tables, a section of 16th century mine pump column, the majority of the Botallack count house tin dinner service and a range of historic survey equipment. A selection of these artefacts is displayed within the Hard Rock Museum. Some others have been replaced in their original contexts on the visitor tour, some are used as part of handling collections, a further group are held in storage and are available for use within temporary exhibitions, whilst a small number of artefacts have been loaned-out to other sites or organisations. These artefacts (and the associated archives, below) have either been catalogued, or are in the process of being catalogued, whilst a Collections Management Plan prepared to professional standards addresses requirements for their acquisition, cataloguing and care. The principal artefacts on the site are listed by building in Appendix 1.

Figures 60-64 show the locations of significant artefacts on the site. It should be noted that much of the equipment identified is of international significance due to its rarity, as is the group value of such a collection – much of which could potentially be put back to working order without any significant loss of authenticity. Fig 64 shows the locations of key pieces of equipment within the mill and Fig 63 those within the slimes plant.

Archive materials

Geevor mine has a very substantial written and drawn archive, including a large collection of original maps, plans and drawings, a considerable number of original photographs and a very extensive and wide ranging collection of mine records. The collection is unparalleled on any other hard rock mine in Britain.

Significance within the local landscape

Geevor represents the physical manifestation of a long process of technological innovation and evolution, the exploitation of local mineral resources and the evolution of a local community with mining in its blood. All have had an impact on the surrounding landscape over the course of at least two millennia, indeed the distinctive character of the St. Just Mining District has been largely shaped by the activities of generation upon generation of miners. In many other parts of Cornwall, that process came to an end at the end of the 19th century, but at Pendeen, 20th century miners brought new technologies to bear on Cornwall's ancient mining industry, allowing the exploitation of previously unreachable reserves of tin. As a result, the loss of traditional work skills and local culture which occurred in formerly thriving mining areas elsewhere in Cornwall was averted here. The mining settlements between St. Just and Bojewyan retained their strong cultural identity, economy and appearance into the late 1980s. The physical survival of Geevor Mine adds a further strand to the local industrial landscape, within which visitors can see sites which demonstrate the application of mining technologies dating from at least the medieval period right up to the 20th century – spanning the entire history of Cornish hard rock mining from its inception to its demise.

Significance to Cornwall

Geevor Mine is the principal visitor and educational gateway site for the interpretation of hard rock mining in west Cornwall. It is one of only three Key Sites for the Cornish Mining World Heritage Site. Geevor Mine has established physical, historical and operational links with the National Trust at Levant immediately to the west and intends to further develop these. Geevor is also one of the very few locations within Cornwall where the public can experience conditions underground in an authentic location.

Significance to the local community

Geevor mine has always been at the heart of the local community, employing over 450 men directly during the long period when it was operational. The mine also indirectly supported much of the local infrastructure, including shops, garages, hauliers, pubs and other small businesses within Pendeen, Trewellard, Carnyorth, Botallack, Truthwall and St. Just. The mine was also at the heart of community life, supporting local sports teams, hosting galas, fairs and other events and constructing a tidal swimming pool on the nearby foreshore. The long presence of Geevor as an operational mine at the heart of the

district ensured employment opportunities for generations of local families, maintained the continuity of the economic basis of an otherwise relatively marginal part of Cornwall and helped to ensure local community cohesion and identity.

Much of this was at risk of loss when Geevor closed in 1991, resulting in a considerable degree of fragmentation within the local community. Not unsurprisingly, the retention of the site and its conversion to a heritage attraction in the years following its closure initially met with mixed responses locally (including some hostility and calls for the site to be razed to the ground and replaced with industrial units which would provide employment opportunities lost with Geevor's closure), but the appointment of a locally-based charitable trust (Pendeen Community Heritage) as site operators, and the policy of employing local people and working with local businesses whenever possible has given Geevor a new role within the community. This is clearly reflected by the many donations of artefacts to the site by local people, by the willingness of local people to participate in the oral history project, and by the growing number of volunteers assisting at the site. Strong links have also been forged with local schools by the education and outreach team.

Ecological significance

The distinctive ecological characteristic of the Geevor Tin Mine site is the presence of the spoil and other workings left by the mining activities; the contamination of soils by metals provides habitat conditions which are rare and, as a consequence, the species of plant and animal found on them include those that are highly specialised and rare, particularly the liverwort Greater Copperwort *Cephaloziella nicholsonii*. This characteristic is given even more distinctiveness by the exposure to coastal effects, particularly salty winds, the steep rocky sea cliff and coastal grasslands, the extensive areas of granitic exposure and the landward patchwork of small fields with the ancient enclosing stone hedges.

An important aspect of the ecology of the site is the close proximity of the very different habitats such as open bare ground near lush flowery grasslands and patches of sheltering scrub and Bracken; this complexity of habitats is one of the strongest features of the site since it allows animal species which need a variety of conditions to exploit the site and thrive, these including reptiles, amphibians, nesting birds, grasshoppers, solitary ground-nesting bees thrive.

Metalliferous mine sites are of considerable importance for wildlife and the presence of particular species and habitats at Geevor tells the story of man's influence on the site over the many years of mining. A key feature of the site is the presence of uneven ground, hummocks and hollows, bunds, spoil heaps and thin compacted soils which influence the habitats and species associated with the site. These topographical and structural features provide a range of habitats that constitute a key component of the site, together with the contaminated land and the range of former mine buildings.

5 Issues and vulnerabilities

The aim of this section is to address those issues and vulnerabilities which might negatively affect its future, both in relation to its conserving its significance and authenticity, but also to its viability and potential for development and growth.

SWOT Analysis

SWOT analysis is a strategic planning tool used to evaluate a project or (in this case) a site. As part of the background to this CMP Pendeen Community Heritage and Cornwall Council have proposed a number of both short and long term projects intended to both maintain the significance and authenticity of the site and to underpin the economic viability of the site as a whole.

The approach consists of identifying four groups of factors (some relating to the nature of the site and the way it is operated, some to external factors) which may either positively or negatively affect the achievement of the overall site vision and aims, namely:

- Its inherent **strengths**
- Its **weaknesses**
- **Opportunities** to enhance the site
- Factors which might **threaten** the ability to achieve the core aims of the vision for the site.

A summary SWOT Analysis has been produced (see Appendix 2). This has been used to inform the following sections.

5.1 Issues

Cornwall Council owns the Geevor site outright and holds the maintenance budget, though the site is operated on the Council's behalf by Pendeen Community Heritage. Whilst Cornwall Council have the ultimate responsibility for the condition of the buildings and landscape making up the site, in practice, Pendeen Community Heritage are responsible for the identification of defects and deterioration, for undertaking small-scale maintenance tasks and for reporting any requirements for more significant repair works to Cornwall Council. Both parties have a responsibility to pay due regard to constraints imposed by the designations applying to the site, most particularly its Scheduled status.

Large scale safety and drainage works were carried out across the whole of the site during the mid 1990s, together with some limited building conservation utilising Derelict Land Grants and the Land Reclamation Fund. A large-scale building conservation project (including the creation of the Hard Rock Museum) was undertaken between 2001 and 2008.

- The principal issue relating to the site relates to the potential sustainability of the site during a period when Cornwall Council budgets are diminished and, whilst there is a recognition that alternative sources through which income generation need to be identified to sustain the site, the realisation of these is at an early stage.
- Despite the high quality of the majority of the work undertaken during these two programmes of work, the exposed location occupied by Geevor inevitably results in a more rapid rate of structural deterioration than would be the case in a more sheltered location. The addressing of minor structural issues in a timely manner is particularly important if these are not to develop into more major and expensive issues. In order to achieve this where only a relatively limited maintenance budget is currently available, a best value approach should be agreed upon and followed. A condition survey carried out as part of this Management Plan (Appendix 4) has identified issues relating to most of the buildings on site, some of these being significant and requiring urgent attention. Those impinging on the quality or safety of the visitor experience potentially have impacts on the economic viability of the site.
- Of particular concern is the poor quality of the some of the works carried out during the 2001-8 HLF-funded works programme. This was noted at the time and instructions issued to correct deficiencies, but it has subsequently become clear that the quality of the work fell far short of that required. It is clear that rotten wood was over-painted, surfaces inadequately prepared and priming coats omitted (Figs 92-3). In some cases (as for instance the flat roof of the 1st Aid Room/Mine Rescue Room/Steam Winder) the materials used were either inappropriately specified or incorrectly applied. Failure of the specialised surfacing treatment utilised to prevent further corrosion of the steel reinforcement of the concrete portal frames of the Top Fitting Shop has been widespread. The rectification of these issues will be expensive and will inevitably reduce the amount of the maintenance budget available to address other issues around the site.

- In addition, despite the best efforts of the engineers involved in the 1990s safety programme, some early shafts and mine workings were not identified at the time, and have been prone to subsidence. Two have appeared in the entrance roadway, one of these remaining untreated until early 2014. The likelihood of other failures along lode outcrops, particularly along that of the Pig Lode underlying the roadway to the site should be considered high.
- A major omission from previous conservation projects relates to the machinery, equipment and artefacts which make a key contribution to the significance of the site. Whilst the age of much of this equipment is an important factor in its significance, it can also result in an inherent vulnerability to deterioration (Fig 98). Steel components which were continuously exposed to mud and water when operational have often corroded, in some cases to levels where authenticity of appearance could only be restored through the replacement of some of the worst affected elements – the unique rake classifiers are a case in point. In some cases (such as the hydrosizers sited above the visitor route), advancing corrosion of steelwork will inevitably give rise to health and safety issues. Similar processes have affected the timber components of equipment such as the shaking tables, some of which are showing sign of rot. Their linoleum decks, which were kept permanently wet when operational, have dried out and cracked. In some cases the integrity of both their timber and linoleum components has deteriorated very significantly (Fig 96). Some equipment such as the compressors, winding engines ball and tube mills has been maintained through cleaning and the application of oil coatings to arrest corrosion (Fig 68), whilst the guides and volunteers have brought some of the electric locomotives, rocker shovels and tram wagons back into good condition through cleaning, painting and partial rebuilding (Fig 72). Given the importance of the collection of machinery, equipment and other artefacts as a whole to the overall significance of Geevor, a condition audit of this aspect of the site must be a high priority.
- A number of buildings across the site are currently either completely unused or are significantly under-used. In some cases this has resulted in a level of ongoing structural deterioration which will inevitably increase the costs of any future repairs; under-used and deteriorating buildings also impact upon the attractiveness of the site to potential visitors – the condition of those making up the Wethered Shaft complex at the site entrance may deter potential visitors from travelling on downslope to the core area of the site. The lack of use of some buildings and the under-use of others could also potentially have impacts on the financial viability of the site.
- As inherited from the former site operators in 1992, the roadway providing visitor access to the site was not in particularly good condition. Over the past two decades it has deteriorated significantly, particularly in its entrance section and was, until very recently, badly potholed. In addition, an unsecured mine subsidence had been present in the roadway for three years. As a result, the roadway had become visually off-putting and physically unwelcoming to visitors; it is particularly important that safe and welcoming vehicular and pedestrian access to the site is maintained.
- Uncontrolled sewage discharges in various parts of the site through failures in the main sewage system which traverses it at several points have, in the past, led to the underground tour having to be closed to visitors, have raised issues of faecal contamination of publicly-accessible areas within both the core area of the site and at its seaward end near the Coast Path, and have contributed to significant deterioration of and damage to historic structures at Trewellard Zawn. Un-managed surface water discharges on the lower part of the site have also contributed to this damage.
- Some buildings and areas of the site are currently under-interpreted or under-appreciated by visitors. With the exception of the underground tour, visitors' experience of the site during the high season is based on self-guiding principles.

Observation of visitors touring the site suggests that the types and levels of interpretation available in some key areas of the site (the mill being a particular case in point) do not meet their needs and do not do justice to these parts of the site.

- The attractiveness of the Geevor site to visitors, and thus its economic viability depend on the site and its components being maintained to an adequate standard, on the quality of the visitor experience, and on the ability of the site to both draw in additional visitors and to encourage return visits. Addressing this will depend on factors such as the adequacy of the maintenance budget to address identified issues, the identification of other sources of revenue or grant aid to support projects and developments, the degree to which the site is identified as an exciting and interesting place to visit, and the development of new reasons to visit the site.
- Despite the works undertaken in 2010/11 to more or less double the length of the accessible sections of the Wheal Mexico adit system, the physical extent of the existing underground tour presents an absolute constraint on its carrying capacity. The underground tour is one of the principal reasons why visitors come to Geevor. If the financial viability of the site is to be addressed by increasing visitor numbers significantly, it is inevitable that the underground tour will, as a result, reach capacity, once again leading to long waiting times to go on the tour and potential visitor dissatisfaction. If this issue were to become public though social networking or equivalent sites, the viability of the site might be significantly adversely affected.
- No coherent plan for the management of archives and artefacts has been considered until relatively recently, although this is now in place and the process of accessing, cataloguing and storing these resources in the most appropriate available locations is under way. As Geevor was not designed as a heritage site and museum, it has no dedicated, purpose-built humidity and temperature controlled archival storage and conservation facilities, and no equivalents for the storage and conservation of artefacts. Until such facilities are available appropriate to the needs of these resources, they must be considered at risk to some degree.

Issues relating to the ecology of the Geevor site

- With the exception of the core area of the site and its approaches, little or no vegetation management is undertaken by Pendeen Community Heritage. The colonisation by scrub or other successional vegetation of the unmanaged areas of the site may result in the reduction in extent of areas of bare ground, of sand and gravel and similar habitats which, at Geevor, are likely to be significant for invertebrates; similar factors may affect the important colonies of bryophytes recorded at Geevor. Unmanaged scrub growth is also likely to encroach onto other habitats, reducing the value of the site for biodiversity.
- There is a lack of any planned strategy for control of non-natives and scrub, some of which have invasive capabilities. For non-natives the aim should be control and gradual elimination whilst scrub needs to be controlled but not eliminated since it provides habitat diversity.
- There is a lack of a planned strategy for the retention of the distinctive bare ground habitat, including the uneven surfaces, humps and hollows which produce valuable micro-climates with high temperatures that are favoured by reptiles and certain insect, and the particular qualities of these distinctive soils. This could be achieved, at least in part, by planning longer term cycles of exposure and colonisation of selected areas for targeted species/communities with the aim of retaining a planned proportion of bare habitat within the site.
- There is a risk of the loss or degradation of, specifically, the fragile contaminated ground habitat around the mine buildings where there are colonies of rare lower

plants; this could occur because of anthropogenic physical disturbance, shading from, for instance, scrub development, changes in surface water flow patterns or deposits of air or water borne deposits

- There appears to be a low level of understanding of the local distinctiveness of the areas of standing water which are of value to wildlife such as amphibians and the importance of the mosaic of habitat types across the site.

5.2 Vulnerabilities

Like other heritage sites within Cornwall and Britain as a whole, Geevor's financial viability is vulnerable to a number of external factors including:

- Weather during the visitor season. It is unavoidable that, if the weather is fine and sunny, summer visitors to Cornwall tend to go to the beach rather than to undercover attractions such as Geevor unless they are very high profile sites. Conversely, if the summer is notably poor, some potential visitors to Cornwall tend to head abroad to locations with guaranteed hot and sunny climates. Both factors make resource planning somewhat difficult for the site managers, particularly in relation to projecting staffing levels.
- The general state of the economy. This can have two principal impacts: firstly the current ability of Cornwall Council to provide a level of budget adequate to support the maintenance of the site and secondly the level of visitors' disposable incomes and willingness to spend at paying sites such as Geevor. These may potentially feedback on each other if the site becomes perceived as run down and unattractive.
- Geevor's profile as a visitor attraction. Notwithstanding the joint marketing initiative represented by CMAMA and the efforts of the World Heritage Site team, Geevor is inevitably in direct competition for visitors with other attractions within Cornwall, indeed within Britain. The development of major initiatives such as the Eden Project certainly brought large numbers of additional visitors to Cornwall, but may well have drawn others away from existing attractions such as Geevor.
- The recent summer Olympic Games is understood to have had an effect on the numbers of visitors to Cornwall (though Geevor was reportedly not significantly affected), but other sites may be established or events take place in the future which may reduce the numbers of potential visitors to the site – as an example, the outbreak of Foot and Mouth and the closure of the countryside to walkers had a significant impact on the rural economy and on visitor numbers, whilst the winter storms of 2013/14 and the severing of the main line rail link at Dawlish had the potential to significantly impact on visitor numbers around Easter 2014. Geevor therefore needs to establish and maintain an attractive and well-positioned brand identity which is regularly reassessed, refreshed and if necessary, redefined to suit changing markets.
- In addition, some concern has been expressed nationally as to the continued viability of Britain's industrial heritage sites. The drive to establish these over the past half century and interest in them were, to a considerable degree, responses to the post-War loss of many traditional British industries. Many of the visitors who formerly bolstered the success of such sites had grown up during the period when such industries were operational – nostalgia was an important factor in attracting and sustaining visitor numbers, as well as in providing the experienced staff and volunteers who established and maintained such sites. Today's younger generations, and those who will be the visitors of the future lack that direct experience of times when these industries were an important and integral part of the national economy and culture. Such sites may, therefore, experience a reduction in visitor interest, threatening their long term viability, unless ways can be found to refresh their attractiveness to future visitors.

- The current extended downturn in the economy constrains both the ability of Cornwall Council to undertake the works necessary to bring the Wethered Shaft buildings up to a standard where they would be attractive to potential new users and the willingness of potential users to take on repairing leases. As a result, these structures may continue to remain run down and unused, presenting an unattractive gateway to the Geevor site, deterring visitors from proceeding past them to the core site and significantly raising the costs of any eventual conservation and repair works.
- A lack of adequate resources to address the identified deterioration of the condition of the buildings making up the site, or of the artefacts, equipment and machinery, which underlie its considerable significance has (June 2014) led to the site being placed on the Schedule of Monuments at Risk by English Heritage.
- Pendeen Community Heritage may not have either the specialised staff or resources which will be required to raise the income generation potential of the site through attracting grants, fundraising, or developing commercial activities.
- Succession issues may arise as former Geevor employees retire from guiding or other involvement in the site and as community members with knowledge of the site are lost through ageing. This will inevitably impact on a full understanding of the site and the loss of specialist knowledge concerning the operation, maintenance and repair of equipment. Succession planning is required to minimise these impacts. This could be the basis of a community project similar to that already initiated as the Oral History Project.

Vulnerabilities relating to the ecology of the Geevor site

- The vulnerability of the rich lichen communities on the heathland and soil areas. In particular, the heathland re-creation area should remain fenced in order to protect the developing community of lichens in this area, including a number of rare, ephemeral species.
- The moss and liverwort communities on the seemingly bare contaminated soils and vulnerable to the effects of construction, maintenance or other physical impacts, as well as to the development of successional vegetation which may either shade or crown them out.
- Lichens on the site are vulnerable to the importation of soils and other materials such as gravels; thick layers of fertile top soil particularly would not encourage lichens. Lichens are also vulnerable to mortar mixes based on Portland cement. Wherever possible, lime-based mortar mixes should be used in areas important for lichens.
- Geevor is of particular importance to rarer insects because of the extensive areas of uneven ground, hummocks and hollows, bunds, spoil heaps and thin compacted soils which influence the habitats and species associated with the site. Of particular value to invertebrates are the conspicuous areas of dark coloured spoil where there is no vegetation growth. South and west-facing slopes are generally of higher value than the more level areas, since they provide areas that heat up quickly in the sun, suitable for warmth-loving insects. Many of the wasps and bees are increasingly rare as these bare ground habitats disappear, emphasising the importance of these remaining mine sites for wildlife (Spalding, 2005). Such key sites for invertebrates are fragile and are vulnerable to disturbance.
- Reptiles on the Geevor site are vulnerable to dog walking and other human activities. Finding a balance between recreational access and the need to minimise disturbance to their habitats (particularly in the case of adders) may be problematic.
- In relation to mammals on the Geevor site, the known badger setts on the site are vulnerable to disturbance. Deliberate disturbance to a badger set is illegal under

the Protection of Badgers Act 1992, but other human activity such as might also result in the abandonment of setts.

- Non native plant species (either those which have been deliberately planted or which have become naturalised in the local landscape) may be potentially damaging to the biodiversity interest of the site if uncontrolled. Some are potentially invasive, having the potential to increase vigorously and replace native species, those recorded on the Geevor site including:
    - Butterfly bush *Buddleia davidii,* Cotoneaster *Cotoneaster sp., Montbretia Crocosmia crocosmoides,* Japanese knotweed *Fallopia japonica*, Japanese Rose *Rose rugosa* and Russian comfrey *Symphytum x uplandicum*.

6 Conservation Philosophy

Conservation is defined as *'The process of managing change to a significant place in its setting in ways that will best sustain its heritage values, while recognising opportunities to reveal or reinforce those values for present and future generations'* (*Conservation Principles, Policies and Guidance*, English Heritage 2008).

A site's importance may relate to the historic or archaeological importance of its structures and features, its collections of artefacts and archives, its ecological or mineralogical significance or its importance to the community, both locally and more widely. Frequently, and this is clearly the case with Geevor, it relates to a combination of these factors. For a conservation philosophy to be effective and appropriate, it must address all of the significant interests in the site and seek to retain those qualities and aspects of it which lead to it being considered important.

The retention of some of these significances is ensured by statute, as for instance in the case of areas which are designated as Scheduled Monuments or Sites of Special Scientific Interest. Such designations will constrain change unless it can be demonstrated that it will result in the retention or enhancement of significance, or be otherwise unavoidable. In this respect it should be recognised that small scale incremental changes can be just as damaging to the overall authenticity of a site and its components as individual major changes.

Equally, some elements of significance are protected by policies embedded within plans drawn up by bodies such as Cornwall Council, the Cornwall AONB or the Cornish Mining World Heritage Site team.

The following nationally agreed conservation principles should provide the framework underlying the sustainable management of the Geevor site:

Principle 1 – The historic environment is a shared resource

Principle 2 – Participation is a key factor in sustaining the historic environment

Principle 3 – Understanding the significance of places is vital

Principle 4 – Significant places should be managed to sustain their values

Principle 5 – Decisions about change must be reasonable, transparent and consistent

Principle 6 – Documenting and learning from decisions is essential

7 Moving forward: vision and aims

See also Appendix 5.

Geevor mine was rescued from complete obliteration in 1992 by Cornwall County Council in recognition of its unique significance to the history not only of Cornwall but to the wider world with the express aim of establishing a high quality heritage site capable of interpreting the story of hard rock mining.

This bold vision has taken two decades to achieve through extensive safety and conservation programmes, partnership working with the locally-based management team, the designation of the site as a nationally important Scheduled Monument and its identification as a Key Site within the World Heritage Site, the creation of the Hard Rock Museum and the development of a strong brand identity. These achievements are a credit to all those who have been involved with developing the site since 1992, and who ensured that initial vision was sustained.

That initial vision still stands and should underpin the future management of the Geevor site. In summary:

Geevor is the most complete, important and best interpreted conserved 20th century tin mine heritage site anywhere Europe, a tribute to Cornwall County Council's far-sighted decision to purchase it for the people of Cornwall to rescue the site from the imminent demolition of its buildings and the scrapping of its machinery in 1991-2. Since then, locally, regionally and nationally, many people have worked hard to develop the site to bring out its potential, not least Pendeen Community Heritage, who have managed Geevor since 2001.

Much has been done which all involved in the site over the past two decades can be proud of, and Geevor already offers a multi-layered visitor experience enjoyed by over 35,000 people each year, and one which is provided by members of its local community. The site still has considerable potential for growth, however, whether it be in the development of interpretative projects, hands on activities, or the use of currently empty buildings, all of which would help to build the site into a fully sustainable entity. Ambitions run high at Geevor, and the most fiercely held of these is to see the site awarded National Museum status for hard rock mining.

The site specific aims are:

- To ensure the preservation of the special qualities of the Geevor site;
- To strengthen its financial viability;
- To address gaps in knowledge concerning the Geevor site;
- To continue to develop ways of communicating the special nature of the site and to broaden interest in it and understanding of it;
- To further develop access to aspects and areas of the site to the widest possible audience, both physically and utilising virtual approaches;
- To conserve its collections of archives and artefacts to appropriate national standards and, wherever possible, make these available for study;
- To achieve full Accredited Museum Status;
- To respect and celebrate the national and international importance of Geevor as a Scheduled Monument, a Site of Special Scientific Interest, an Area of Outstanding Natural Beauty and a Key Site within the Cornish Mining World Heritage Site;
- To develop a strong and effective working partnership between Cornwall Council as site owners, Pendeen Community Heritage as site operators and the local community to safeguard the site and continue to make its significance relevant to and recognise by future generations;
- To achieve the highest possible standards of environmental performance;
- To provide sustainable and rewarding employment, volunteering opportunities and training and skills development.

8 Policies

Statutory designations

Given that the majority of the site is a Scheduled Monument and that the coastal strip is designated as a Site of Special Scientific Interest (SSSI), activities or proposals likely to affect the site are controlled by the relevant legislation, namely:

- The Ancient Monuments and Archaeological Areas Act 1979
- The Countryside and Rights of Way Act 2000

Scheduled Monument Consent in writing will be required for all works not previously agreed in advance and in detail with English Heritage as part of a management agreement, or undertaken in emergency circumstances.

Site of Special Scientific Interest Consent will be required in writing from Natural England for all works likely to impact a SSSI.

World Heritage site status does not currently confer any additional statutory protection, but should be a material consideration in determination of any planning application by the local planning authority or in considering and evaluating the impacts of any major proposal for the site.

National Planning Policy Framework

The National Planning Policy Framework (NPPF) was published on 27 March 2012, replacing all previous Planning Policy Statements and planning guidance. Its planning principles underpin both plan-making and decision-taking. Relevant policies include:

- *Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset) taking account of the available evidence and any necessary expertise. They should take this assessment into account when considering the impact of a proposal on a heritage asset, to avoid or minimise conflict between the heritage asset's conservation and any aspect of the proposal.*
- *When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation. The more important the asset, the greater the weight should be. Significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. As heritage assets are irreplaceable, any harm or loss should require clear and convincing justification. Substantial harm to or loss of heritage assets of the highest significance, notably scheduled monuments … should be wholly exceptional.*
- *Where a proposed development will lead to substantial harm to or total loss of significance of a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply:*
    - *The nature of the heritage asset prevents all reasonable uses of the site; and*
    - *No viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation; and*
    - *Conservation by grant-funding or some form of charitable or public ownership is demonstrably not possible; and*
    - *The harm or loss is outweighed by bringing the site back into use.*
- *Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighted against the public benefits of the proposal, including securing its optimum viable use.*

- *The effect of an application on the significance of a non designated heritage asset should be taken into account in determining the application. In weighing applications that affect directly or indirectly non designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.*
- *Local planning authorities should look for opportunities for new development within Conservation Areas and World Heritage Sites and within the setting of heritage assets to enhance or better reveal their significance. Proposals that preserve those elements of the setting that make a positive contribution to or better reveal the significance of the asset should be treated favourably.*
- *Non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets.*
- *To minimise impacts on biodiversity and geodiversity, planning policies should:*
    - *Promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets, and identify suitable indicators for monitoring biodiversity in the plan*
    - *Aim to prevent harm to geological conservation interests*

Area of Outstanding Natural Beauty

The whole of the Geevor site falls within the Cornwall AONB. Policies relevant to Geevor include:

[The AONB will]:

- *PD6 Support tourism development that conserves and enhances the diverse local landscape characteristics of the sections of the Cornwall AONB. Ensure that in the development of tourist facilities the scale, design and use of materials has appropriate regard to the character, sensitivity and capacity of the protected landscape.*
- *HC1 Ensure all AONB terrestrial and marine heritage assets, not simply those which are designated, are brought under high quality management and use, and that appropriate monitoring is put in place to ensure their continuing survival, in good condition*
- *HC4 Seek opportunities to increase access to and understanding of both the physical and intellectual historic environment within the AONB, working with education providers and venues to promote the historic environment and deliver opportunities for lifelong learning.*
- *HC5 Support the recording and appropriate interpretation of all aspects of the AONB's historic environment to ensure local communities and visitors gain a good understanding and experience of place*

Cornwall Local Plan 2010 – 2030

The former Cornwall Structure Plan has been superseded by the Cornwall Local Plan 2010-2030, proposed for adoption in early 2014.

The draft Local Plan seeks to address all aspects of land use planning and contains a policy relating to the protection of the historic environment:

Development proposals will need to retain Cornwall's local distinctiveness and character and protect and enhance Cornwall's historic environment and assets according to their international, national and local significance through the following measures:

- *Protect, conserve and enhance the historic environment of designated and undesignated heritage assets and their settings, including historic landscapes,*

settlements, Conservation Areas, marine environments, archaeological sites, parks and gardens and historic buildings

- *Enhance and promote the outstanding universal value of the World Heritage Site and its setting; supporting the adopted management plan.*

In relation to the natural environment, the Local Plan seeks to protect this through:

Specifically ensuring that with direct and cumulative impact:

- *international, national and locally designated sites for nature conservation are safeguarded from inappropriate development including appropriate buffer areas and provision made for their management based on up-to-date evidence and management plans.*
- *conserves, protects and enhances features of biological or geological interest (including Biodiversity Action Plan habitats and species), and provide for their appropriate management.*
- *ensure no net loss of existing biodiversity and enable a net gain in biodiversity by designing in biodiversity, and ensuring any unavoidable impacts are appropriately mitigated and/or compensated for.*
- *the importance of habitats identified in the South West Regional Nature Map and the creation of a local and regional biodiversity network of wildlife corridors and local wildlife sites, helping to deliver the actions set out in the Cornwall Biodiversity Action Plan are recognised.*

World Heritage Site Management Plan (2013 – 2018)

The revised Cornish Mining World Heritage Site Management Plan sets out policies designed to achieve the protection, conservation and enhancement of the Outstanding Universal Value of the World Heritage Site and its constituent parts, of which Geevor Mine is a significant element. The following are relevant to the Geevor site:

<u>Sustainable development</u>

Policy C1: Sustainable heritage-led regeneration should be promoted.

Policy C2: Adaptive re-use of buildings should add to the quality, distinctiveness and sustainability of the overall Site by being of high quality design and respectful of setting.

Policy C3: There should be a presumption in favour of retaining and re-using historic buildings which are important components of the World Heritage Site

Policy C5: Landscape, nature conservation and Countryside management regimes should have regard for the authenticity and values of the Site.

<u>Conservation and maintenance of key components</u>

Policy C6: The conservation and continuing maintenance of the historic fabric of the Site should be undertaken to the highest standards to ensure authenticity and integrity.

Policy C7: The historic character and distinctiveness of the Cornwall and West Devon mining landscape should be maintained.

Policy C9: Where the historic fabric within the Site has been lost or compromised through non-authentic materials, inappropriate details and poor workmanship, historic character and detail will be reintroduced wherever and whenever possible.

Archives, collections and data

Policy C13: Archives, collections and data concerning the World Heritage Site should be curated, catalogued and conserved and made accessible to all.

8.1 Policies specific to Geevor

Underlying principles

- *The site will be managed in ways which will ensure the effective and appropriate conservation of its buildings, landscape, machinery and equipment, artefacts and archives. Where possible efforts will be made to enhance the condition of rare, significant and vulnerable components of the site.*
- *Understanding the significance and character of the site will guide and inform all management decisions.*
- *All proposals affecting the site will be considered to determine:*
    - *Whether they are necessary and whether alternative options have been fully considered;*
    - *Their potential impacts on the special qualities of the site;*
    - *Whether they accord with the Conservation Philosophy, vision and aims for the site.*
- *Thorough records should be made before, during and after all works.*
- *Compliance with statutory obligations will be ensured.*
- *The site owners and managers will work to enhance the financial viability of the site and access to it.*

Management and ownership

The site owners and managers will work in partnership to maintain the site's significance and character, the health and safety of visitors, and the long term sustainability of the site.

Legislative and policy framework

All works that affect the special architectural, historic or ecological interest of significant buildings or areas of the Geevor site will be planned in accordance with statutory and local authority guidance, and in accordance with the World Heritage Site Management Plan.

Conservation philosophy

All works to buildings will be appropriately specified and recorded, and will be based on a like for like choice of materials and techniques which will retain authenticity of appearance, unless structural or health and safety factors require otherwise.

New development or alterations will not be allowed to obscure the significance, character and understanding of the original form of any building.

Maintenance and management of site components

All elements of the Geevor site will be managed in a fashion which ensure that they do not become degraded, resulting in a loss of authenticity and significance. A periodic monitoring scheme will be put in place to identify and report on any defects or other issues affecting buildings, areas of the site, artefacts (including machinery), archives and habitats, and a planned and prioritised maintenance programme shall be drawn up and agreed by Cornwall Council and the site managers.

The site managers will ensure that their employees are aware of their requirement to comply with legal obligations relating to the site, given the statutory designations applying to most of the Geevor site.

Machinery, equipment and artefacts

All machinery, equipment and artefacts original to the Geevor site will be retained in situ and maintained or conserved to ensure that they do not become degraded.

A programme will be set in place to monitor the condition of all artefacts and archival materials.

Adaptive reuse of buildings

Adaptive re-use of buildings making up the wider Geevor site will be permissible only where this can be demonstrated not to negatively impact on the authenticity and significance of the site, and where such adaptive re-use will enhance the financial sustainability of Geevor Mine. An appropriate degree of change may be appropriate at specific locations, but will generally be avoided.

Interpretation and Education

Interpretation and education programmes will be further developed as core elements in the future management of Geevor.

Access to the site and its components

The site owners and managers will seek to enhance access to components of the Geevor site to the widest possible audience, both in physical form and utilising virtual means.

Environmental sustainability

Measures to promote environmental sustainability and energy saving will be followed where these do not conflict with the historic significance of the buildings and its group value.

Ecology

Assessments of the significance and condition of the ecological resource will be used to identify the scope of any works required to ensure that the ecological resources of the site are not allowed to degrade or be damaged, in particular those areas which favour rare or endangered species. Where possible, opportunities should be identified to enhance these important values of the Geevor site.

Management strategies for the site should ensure sustainable uses of the site that will maintain its distinctive habitats and nature conservation interests in a favourable state, including the features of the Site of Special Scientific Interest and those which contribute to the national biodiversity strategy.

The owners and managers of the site will ensure that the legal framework and statutory consent procedure protecting ecological resources is fully understood and adhered to by all people working on site

Invasive plants (Schedule 9) and non-native vegetation within the Geevor site will be eradicated where possible.

Opportunities will be sought to raise awareness of the importance of the site for the wildlife of the locality and for its conservation.

Research into the natural heritage and post-industrial ecology of the site will be encouraged, especially that which will develop the skills required to manage its distinctive features.

Adoption and management of the Conservation Management Plan

The future conservation and development of Geevor mine will be undertaken in accordance with the guiding principles and vision policy set out in this Plan.

Arrangements will be made for the site owners and managers to update, and review this plan as need arises. A full Plan review will be undertaken no later than five years after its formal adoption.

9 Use of the Conservation Management Plan

9.1 Adoption and responsibility

This Conservation Management Plan has been adopted by Cornwall Council and PCH as a document which will underpin considerations by both parties as to the management of the whole of the site, including both its designated and undesignated areas. The master copy of the Plan will be retained at Geevor Mine and updated as and when required by the site managers (currently Pendeen Community Heritage). Copies of the updated works record sheets will be supplied to English Heritage and Cornwall Council on an annual basis.

9.2 Use of the plan

The conservation policy, vision and aims set out in this Plan should underpin all aspects of the future management of the Geevor site, including not only major developments or projects but also the business of day to day site operation including small scale maintenance works.

9.3 Monitoring and improving the Plan

9.3.1 Monitoring

Monitoring of the implementation of the Conservation Management Plan policies is a key responsibility of Cornwall Council as site owners and Pendeen Community Heritage as its managers.

9.3.2 Plan review

No conservation management plan can anticipate the effects of future legislation, the effects of a changing climate, changes in national or local economies or other factors affecting the ability to meet its vision and aims. A successful plan is a relevant plan, and to ensure that is the case, this Plan should be periodically re-evaluated and, if appropriate, revised.

As a result, it is recommended that this Plan is reviewed by the site owners and site managers in consultation with key stakeholders on a five yearly basis.

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http://www.cornish-mining.org.uk The Cornwall and West Devon Mining Landscape World Heritage Site website

http://www.bgs.ac.uk/opengeoscience/ The British Geological Survey's home page

http://www.cornwallaonb.org.uk/welcome The home page of the Cornwall AONB

http://www.geevor.com/ The Geevor Tin Mine home page

http://www.cornish-mining.org.uk/ The home page of the Cornish Mining World Heritage Site

10.4 Project archive

The HE project number is **146314**

The project's documentary and photographic archive is housed at the offices of Historic Environment, Cornwall Council, Fal Building, County Hall, Treyew Road, Truro, TR1 3AY. A copy of the report will be deposited in the Cornwall and Scilly Historic Environment Record, as well as copies of all digital images.

The contents of this archive are as listed below:

1. A project file containing site records and notes, project correspondence and administration.
2. Digital photographs are archived in Cornwall's Historic Environment Record.
3. This report is held in digital form in Cornwall's Historic Environment Record.
4. The OASIS reference for this project is Cornwall2-180316

11 Appendices

11.1 Appendix 1: Artefacts and equipment

A very detailed primary survey of artefacts at Geevor Mine was carried out by the Curator and Assistant Curator in 2002. A follow up survey was carried out in 2010. The resulting list runs to 20 sides of A4, and contains a wide range of objects, despite two phases of scrapping on the site (the major one in 1991, and a disposal of spare materials at the instigation of the Trevithick Trust). Following a rapid re-assessment in early 2014, the artefact list is summarised below. It should be noted that some artefacts such as stoping drills and locomotives are out on long term loan to local pubs and museum/interpretation sites. Most of the larger artefacts consist of machinery mounted on the floors of the various buildings. See also Figs 60-64. Smaller artefacts such as those housed in the Strongroom or Curator's office are not listed here.

Wethered winder house

- Wethered electric winder, motor, etc.

Office/reception

- 2 stoping drills
- Tram wagon
- Botallack dinner plate set and other tin- and pewter-ware
- Hermon pump column
- Pneumatic stamps and tables model
- Wooden water powered stamps model
- Underground model of Geevor and surrounding mines
- Strongroom containing mine maps and plans, small and valuable artefacts, vintage survey equipment
- The curator's room contains the photographic archive and artefacts in transit, as well as additional geological specimens

Storage areas beneath office/reception

- Mine archives
- Holmans paper archive
- Second safe containing very mouldy mine reports and other printed material
- Core storage

Sample house

- Miscellaneous sampling tools, glassware, core samples
- Assay/sampling equipment including calculator, scales, tools, vanning shovel, sample trays, drill cores, crucible stand, sample pans, sieves, samples
- Bucking plate and hammer
- 6" jaw crusher and spares
- Sieve shaker

Union hut

- Miscellaneous paperwork, mostly in the form of mounted displays
- Miscellaneous furniture and fittings

Clockroom

- Time punch clock and card holders

- Holman's paper archive.
- Archives in transit/for cataloguing.

Compressor house

- 3 x Alley and Maclellan Ltd. air compressors, with starter equipment, capacitors, resistors, etc.
- Jumbo rig on dandy car
- Homan's single cylinder steam winch
- Climax air powered column-mounted grinder
- Two drifters with air legs
- Eimco 12B mucker shovel
- 4 sinking drills
- 2 early screw-feed drifters
- 2 air picks
- Tram wagon
- Clayton locomotive
- Spare large electrical motor
- Track maintenance tools
- Mono pump
- Tangye pump

Substation and switch room

- 10 fixed circuit breakers
- 2 fixed transformers
- Miscellaneous electrical equipment

Winder house complex

- Victory winder engine, motor and associated braking and control equipment (with additional control equipment in area beneath)
- Old steam winder
- Various small stores
- One cage and one skip from Victory Shaft
- Levant Skip Shaft man-riding cage
- Model of Victory winder and headgear
- Electric pump
- Lifting gantry
- Suspension gear
- Reel of wire rope
- BTH induction motor
- Half sections of winder drive gear wheel
- Display of suspension rope ends and white metalling tools

Detonator transit store

- 32 Detonator carriers (leather)

- Related artefacts

Drill shop

- 18 stoping drills
- 13 air legs
- 6 drifters (3 partially disassembled)
- Air winch
- Drill sharpener
- Air-powered Holman shaper grinder
- Various small air tools, including Holman picks, wrenches, Holman rotodrill, etc.
- 115 drill steels various lengths
- 8 sets of grouped drill steels
- Smith's tools and forge

Electrical shop and lamp room

- A large quantity of miscellaneous electrical spares, fuses, junction boxes, switches, bulbs etc.
- Shaft signal bells
- Stuart pump
- Parts for Clayton locomotives
- Charging bay for caplamps
- Battery test equipment
- Various batteries, defunct caplamps
- 2 Eimco 12B muckers under refurbishment

Loco shop

- Part of waterwheel frame
- Unfinished Clive Carter models
- Wagon chassis
- 18 miscellaneous drill steels
- 5 stoping drills
- 4 air legs
- 6 bell pulls
- 2 locos under conservation

Wagon shop

- Wagons under conservation

Dry

- Signs, tools, paperwork, personal effects
- Time punch clock and card holder
- 2 hot water boilers

Motorcycle garage behind dry

- Holmans' wooden patterns
- Air bagging

- Holmans' Cornish range front
- Miscellaneous artefacts, mostly from the Holman's Collection

Mine rescue room

- 15 rescue breathing sets, 2 in boxes
- 5 other rescue sets
- 10 spare oxygen bottles
- Stretcher
- Miscellaneous associated materials and ephemera

First Aid Room

- Stretchers, 1st aid bag, treatment table, splints, resuscitators, charts, 1st Aifd materials, etc.

Landing house

- Miscellaneous personal items and signs

Shaftbank stores

- Miscellaneous nuts, washers, pipe fittings and tools

Small underground stores

- Miscellaneous tools, spares and materials

Hard Rock Museum/Top Fitting Shop

- Geological specimens
- Various artefacts (cased and displayed) including a cobble from the site of the Levant breach, a large hydrocyclone, statuettes of miners, Levant memorial plaque, carbide lamps, exploders, balmaid's boots, felt tull, copper souvenirs, early oil lamps, part of the Botallack tin dinner service, survey instruments and record books, carbide and other lamps, dynamite warming pan, various smelters marks in tin, early ingots, various items of Newlyn copper, replica prehistoric axe, sword and antler pick, large kibble.

Top Fitting Shop Stores

- 20 in line oil bottles
- 6 small oil bottles
- Climax pneumatic pick
- Mono pump
- A large number of large size gate valves and pipe fittings
- A large number of spares
- Parts for former fitting shop machinery, including lathe chucks
- 2 vanning shovels
- Shaft signal bells
- Eimco gearboxes and spares
- Miscellaneous hand tools
- Compressed air grinder
- 2 rolls of table surfacing lino

Storage area beneath café

- Miscellaneous compressor spares
- 2 large Stokes' pumps
- 4 LDC pumps
- 1 steam winch
- 4 miscellaneous pumps
- 8 Mono pumps
- 1 SSP pump
- 48 stainless steel screens
- Large electric motor
- Holman's steam pump

Carpenters' shop, Sawmill and extensions

- Dandy cart
- Roll of lino for shaking table repairs
- Circular saw blades
- Miscellaneous signs
- Miscellaneous timberwork
- Pichles and Sons circular saw with motor and chassis

Seco huts

- Miscellaneous objects
- Various models
- Kibble
- 3 shaking table decks (probably now stored outside behind the Carpenters' Shop)
- Roll of lino for shaking tables

Smiths'/welders' bay

- 3 BEV locos
- 8 Clayton locos
- 1 loco unknown manufacturer
- 7 Eimco 12B rocker shovels with spare buckets, etc
- *Note – some of these are currently loaned out*

Bottom fitting shop

- Holman's Foundry and Dock artefact collection
- 2 Geevor tram wagons
- 1 Holman's table motion

Mill substation buildings

- Utilised as small parts stores, and containing a large amount of nuts, bots, etc. as well as other small spares

Outside (various locations)

- Locke stamps and waterwheel (by New Table Section)
- Components of Wheal Prosper stamps (by office)

- Sheave wheels, origin uncertain, possibly Treweek's Shaft (by clock room)
- Eimco 12B mucker (by Hard Rock Museum)
- Clayton locomotive (by loco shop)
- Bigelow primary crusher (by office)
- 3 sand decks for shaking tables, poor condition (by Carpenters' Shop)
- Pump (next to picnic area)
- 2 sheave wheels (mine entrance)
- 1 pump (mine entrance)
- Eimco 12B mucker (formerly at site entrance, currently relocated for conservation works)

Mill washing plant/cone crusher section

- Primary crusher plates

HMS Plant

- Weightometer and section of conveyor to gravel storage area
- Conveyor to ore bin
- Media sump

Ball mill section

- Hardinge ball mill with motor, pump and controller

Area between HMS plant and middle table section

- Mintek XRF on-stream analyser
- 3 overhead feed cones

Middle table section

- 17 shaking tables with various types of deck surfaces in upper section
- 4 hydrocyclones
- 17 shaking tables with various types of deck surfaces in lower section
- 4 pumps
- Small Hardinge ball mill
- Bartle's tube mill
- 2 hoppers
- Two large hydrosizers
- Early wooden froth flotation cell
- 2 modern flotation cells

Third floor

- 2 small ball mills with controllers, etc
- 1 pump
- 2 rake classifiers
- Large floor mounted steel tank (very rusty)

Star circuit

- 1 sand table deck
- 3 slimes table decks

Areas at lower end of Star Circuit building (old tin floors)

- 3 finishing tables
- Wooden 3 pocket Janney classifier
- 8 high level hoppers
- Magnetic separator
- Large wooden tank
- 2 miner's barrows
- 1 shaking table
- 3 pumps
- 1 early wooden froth flotation cell

New tin floors

- 2 Buell driers
- 1 Mono pump
- 2 hoppers above low grade tanks
- Concentrate storage bins

Slimes plant

- 13 Holman shaking tables (4 fine sand, 9 slimes)
- 4 Bartle's-Mozley multideck tables
- 4 prototype Mozley frames (each in pairs)
- 1 washing trommel
- 2 Bartle's cross-belt concentrators
- 7 concrete round tables (3 infilled)
- 1 cyclone pump
- 6 small pumps
- 1 four head hydrocyclone
- 2 screw classifiers
- Miscellaneous spares
- 2 sections of line shafting with 2 separate motors
- Mintek analyser

11.2 Appendix 2: SWOT Analysis

Strengths	**Weaknesses**
<u>The site</u> • The site is owned by Cornwall Council who currently underwrite the operational and maintenance budget. • The site has attracted significant grant funding in the past by bodies such as the Heritage Lottery in recognition of its	<u>The site</u> • Exposure to elements continues to result in deterioration of structures, equipment and machinery. • Some machinery, elements of the site and structures have been removed, reducing the authenticity of the site to some

heritage importance. • A large proportion of the mine-related safety works required on the site were undertaken during the mid-1990s. • Extensive conservation works to buildings were undertaken in 2007 and 2010. • The Hard Rock Museum was established in 2010. • The site has benefited from Council support since 1991. • Geevor is the last surviving large virtually complete 20th century tin mine in Britain. • Geevor sites one of the two surviving complete Brunton calciners in Britain. • A large number of archaeological, historical, landscape, biodiversity, ecological, geological, structural and safety studies of the site have already been carried out. • Geevor is a WHS Key site. • The majority of the site is a Scheduled Monument. • The site lies wholly within the Cornwall AONB. • Parts of Geevor are RIGS sites. • The coastal part of the site is an SSSI. • There is some geological, mineralogical and ecological interest in areas of the site. <u>Attracting visitors and support</u> • Geevor is a well-established visitor attraction (since 1993) and has won a number of tourist awards in recognition of the quality of the visitor experience. • The site has an established high quality and informative web presence. • Geevor is not only within the Cornish Mining World Heritage Site, but also a Key Site within it. • The Hard Rock Museum was established in 2010. • The availability of the underground tour is a major strength. • The Geevor site has a spectacular setting and views. • There is a recognition amongst	degree. • Areas and structures off the visitor tour have received little conservation attention and are not interpreted. • The current power supply is inadequate to run much additional mill machinery. • Some areas of the site and buildings are unused or under-used, leading to the potential for further deterioration. • Some machinery and equipment has deteriorated to the point where extensive repairs may be required – there is the danger of a potential reduction in overall authenticity. • The poor quality of painting undertaken in 2010 will require a significant spend of the maintenance budget in the short term, diverting this from other essential or desired work. • The limited capacity of the present Wheal Mexico underground tour limits significant expansion of visitor numbers. • The 20th century underground workings, a potentially very substantial draw for the site, are currently not accessible to visitors. • The lighting system installed in the Hard Rock Museum is inherently expensive to run. • The interpretation schemes, both on site and in the Hard Rock Museum, especially the interactives, were expensive to produce and will be costly to replace when they deteriorate. Given the nature of the Hard Rock Museum, it and its contents will have to be maintained to a high standard. • The large New Table Section building is currently unused. • Geevor is distant from any significant urban population, and is somewhat off the beaten track. • The site is topographically incapable of adaptation to allow full accessibility, particularly for those with mobility issues. • The site is criss-crossed by

the community that Pendeen Community Heritage is a locally-based organisation. • There is ample visitor parking at the site. • The Geevor site offers good value for tourists, offering a full day out and something for all the family and all interests. • In 2012 Geevor was awarded a Quality Badge by the Council for learning outside the classroom, and won the Sandford Award. In 2013/14, Geevor was awarded Gold for the best art, museum and maritime attraction, Silver for the best historic property and country house and Winner of Winners at the South West Tourism Excellence Awards. Geevor will represent Cornwall in the 2014 International Visit England Awards. • Geevor has an established and popular educational programme and a dedicated learning team. • The site has a dedicated marketing officer. • Operational links with Levant and the National Trust have been established. • A biodiversity trail linking the site to Levant has been established. • There are several potentially accessible early mine workings within the site. • Geevor is located on the coast of West Penwith in an area designated as Heritage Coast. • West Penwith is an established visitor destination. • Geevor is located on the road linking the Tate, St. Ives and Land's End. • The Wethered Shaft headgear is a clearly visible marker for the site for those travelling along the coast road. • The site has highly visible entrance signage. • There is an already-established multi-layer interpretation of the site and its context within the Hard Rock museum. • The site possesses a high quality, flexible display space within the Hard Rock Gallery.	public rights of way, making it difficult to 'secure' for ticketing purposes, and rendering it vulnerable to vandalism. <u>Economic</u> • Geevor is highly vulnerable to the effects of the downturn in the economy. • The current limited availability of match funding for major grants may limit the potential to achieve large-scale conservation or development projects. • CC currently has very limited resources to fund essential maintenance and desired projects. • Any potential expansion of underground tour, either within Wheal Mexico Adit, or on Third Level would be inherently expensive. • The mine café and shop have not been refurbished since 1996 and have limited capacity during the peak weeks of the visitor season. Expansion of the café facilities would be expensive, though a business case could be made for this. • It is difficult for the site managers to project future budgets, especially those relating to staff costs during periods of economic uncertainty. <u>Visitors and learning</u> • The poor condition of the Wethered Shaft buildings and the roadway to site may deter potential visitors from continuing on to the main site. • The mill complex is inadequately interpreted, and hence confusing to visitors. It is also under-utilised as part of the visitor experience. New ways need to be found to interpret this important part of the site without compromising its authenticity. • The slimes plant has little potential for integration into the main visitor tour. • Geevor is not currently one of the principal visitor attractions within West Penwith (Tate St.

- The guides are knowledgeable and informative– face to face contact with a variety of visitor groups provides a very useful degree of flexibility in site interpretation.
- Most restrictive covenants on the site are due to expire in the near future.
- A learning strategy is in place.
- Geevor already attracts school groups from a wide area of Cornwall, as well as from outside the county.
- Geevor is part of the CMAMA marketing group.
- The St. Ives to St. Just coast road bus route stops on site.
- The Coast Path runs across the northern part of the site.
- There is an established events programme, including tin smelting and bronze casting demonstrations, behind the scenes tours, etc.
- Geevor is an authentic Cornish tin mining site.

<u>Collections and archives</u>

- Geevor has provisional museum accreditation status. There is the intention to gain full museum accreditation.
- Geevor possesses a large collection of rare and unique mine equipment, including dressing equipment (shaking tables, ball mills, rake classifiers, hydrosizers, classifiers), steam and electric winding engines and air compressors.
- The site includes a large collection of artefacts relating to the site, to local mining history and to the local community. Some artefacts are rare or unique.
- The site includes a very extensive documentary archive relating to mine operations, social context, etc.
- PCH have developed an extensive oral history archive.
- The site has strong community links.
- A collections policy has been

Ives, Land's End and St. Michael's Mount) or Cornwall as a whole (principally the Eden Project and Tintagel in addition to those in West Penwith).
- The limited nature of the current visitor underground tour continues to constrain visitor throughput and will limit future growth of visitor numbers. An underlying issue may be visitors' perceptions of the attractiveness of an industrial heritage site – if this is the case, efforts would need to be taken to address this issue.
- The walk back up the hill from the foot of the mill is strenuous and very off-putting to those with walking difficulties.
- Many areas of the site are not DDA compliant, and cannot be made DDA compliant, including the whole of the tour through the Mill complex.
- There is presently only limited virtual access to much of the site.
- The attractiveness and interest of Geevor is not visible to visitors passing the site entrance, as the site is hidden by the brow of the hill.

<u>Operational</u>

- There appears to be an inherent weakness in the governance arrangements of Pendeen Community Heritage, leading to the operational manager additionally having to undertake forward planning, fundraising, advocacy and other responsibilities. In a changing funding environment, it might be more efficient for PCH to split these two roles and to appoint a director to oversee strategic matters, business planning and related matters.
- There are no dedicated site maintenance staff.
- It might be worthwhile reconsidering a rearrangement of the shop and front of house arrangements, as it has been commented that these are not as efficient as they might be,

written. • An interpretation strategy was written immediately prior to the development of the Hard Rock Museum. • A volunteer group has been established to assist with activities such as archive cataloguing. • There is an extensive archive of photographs of the site and surrounding locality, many in high resolution digital format. • Almost all of the mine plans have been digitised. <u>Potential for development</u> • The Wethered Shaft site is not part of the Scheduled Monument, making adaptive re-use of this group of buildings more feasible than on the main site. • PCH has an assured management contract with CC for up to 10 years, allowing development plans to be drawn up. • The site possesses a number of buildings with the potential for development and additional income generation, in particular the Old Stores and Carpenters' Shop opposite the Café. • Both the Café and Shop have the potential to be refreshed and made more attractive.	especially during the winter months. • Archive storage conditions are inadequate and inappropriate given the significance of much of these collections. • There are a number of restrictive covenants on the uses to which the site can be put at present. • The curatorial staff is currently under-resourced in view of the scale of the tasks required for archive and artefact management, and particularly if the site wishes to pursue its aspirations for national museum status. • The artefacts collection storage facilities are currently inadequate.
Opportunities <u>The site</u> • Some buildings on or near the visitor tour route are currently unused or under-used. Many have the potential for visitor access and potential revenue generating opportunities. • There is the potential to expand the visitor tour to areas like the winder undercroft. There is also the potential to run specialist tours of areas like the Slimes Plant. • The rationalisation of storage and other facilities would free up some buildings for other uses. • Buildings on the Wethered Shaft	**Threats** <u>Economic</u> • Any continued weakness in the economy is likely to result in reduced visitor numbers and would curtail expansion plans. • CC needs to make significant cuts in costs relating to its estate and operations. Geevor may be a candidate for a reduction in Council support. • The poor condition of the Wethered Shaft site buildings would make it expensive to bring them up to a standard whereby they would be attractive to other users. If repairing leases adopted, little

site could be developed for revenue-generating and site support uses.
- There is potential visitor access to the Western calciner.
- Opportunities exist for a diverse range of exhibitions within the Hard Rock Gallery space and for additional events/demonstration activities within the Newell Dunsford mill building.
- The New Table Section building has considerable potential as a performance or activities space.
- The appeal of the site could be widened by working with sites such as the Tate, St. Ives on installations, site-specific pieces, artists' residencies, etc.
- The large number of walkers crossing the site at its lower end are a currently largely-untapped resource for additional income generation.

Budgetary

- The new (2014) management agreement may allow PCH to make more effective use of maintenance grants and strengthen links with the local community.
- The management partnership with CC enhances access to grants for projects and provides access to specialised professionals.
- There are opportunities for Geevor to work more closely with other museum partners and make use of museum and archive networks.
- A potential extensive visitor tour on Third Level would provide the most attractive underground access at any mine in Cornwall.
- Geevor has the potential for the establishment of a study base for universities and the development of specialist student courses at a number of levels.
- There may be some potential for industry sponsorship in developing projects.
- Catering and shop sales are almost always the most revenue likely to be available to support the main Geevor site.
- The deterioration of rare or unique machinery and equipment is a problem which will be expensive to address.
- Deterioration of the underground tour to the point where it would have to be closed to visitors would have a serious impact on Geevor's ability to attract visitors.
- The deterioration of the Wethered Shaft buildings is likely to be ongoing unless they are adaptively reused. This will result in the costs of bringing them back into productive uses becoming increasingly expensive if not addressed.
- Deterioration of some of the outdoor interpretation materials is already taking place, leading to the site appearing slightly run down in places. The future replacement of the interpretation panels will be expensive to achieve.

Visitors

- One of Geevor's strengths is its inherent interest to a generation for whom industry was an essential part of the British economy. This may not be the case for future generations, and might lead to a significant and permanent reduction in visitor numbers unless the site can be re-branded. This would have to be achieved without affecting its authenticity.
- The effects of climate change may speed up the deterioration of some elements of the site; more frequent periods of inclement weather during the visitor season may reduce the attractiveness of the site to visitors.
- Should deterioration of the site lead to a significant drop in visitor numbers, Geevor's reputation as a high quality, attractive site would be vulnerable.

profitable aspects of heritage sites such as Geevor. Consideration should be given to ways in which revenues from these two sources could be increased. • There is the potential to expand volunteer involvement to cover other activities. • There is a possibility to draw up a medium term Scheduled Monument management agreement with English Heritage, streamlining the SMC process.	Operational • The ageing of former Geevor mine staff will lead to the loss of opportunities to understand Geevor as an operational site, potentially leading to loss of authenticity in future site interpretation or documentation. • Changes in the structure of Cornwall Council might result in a loss of continuity of relationships between the Council and the site. This restructuring might result in a more limited availability of core Council staff to support Pendeen Community Heritage, for example with project development and delivery.

11.3 Appendix 3: Buildings with undeveloped potential

A specific requirement in drawing up this Plan is to identify those buildings which are currently unused or under-used and which might have potential in developing the site, or in enhancing its sustainability through adaptive re-use. The following list reflects the situation at the beginning of 2014. Under-used areas of the site are also listed below.

Wethered power house. A single storey stone constructed building with a mezzanine floor. Re-roofed and externally conserved in 2007. Partially adapted as a laboratory subsequently, but currently unused. Not Scheduled. Significant potential for adaptive reuse.

Wethered winder house. A single storey timber framed and timber clad building containing the original electrically-powered Wethered Shaft winding engine, which would need to remain *in situ* in any adaptive reuse. Re-roofed and externally conserved in 2007. Currently unused. Not Scheduled. Significant potential for adaptive reuse.

Wethered smithy. A single storey stone constructed building. Recently re-roofed. Currently leased to Pendeen Gig Club as a boat store. Not Scheduled.

Geevor Social Club. A large single storey stone constructed building under a cement-asbestos sheet roof. Unused since the closure of the mine. Some structural defects and internally in poor condition. Not Scheduled. Significant potential for adaptive reuse.

Wethered Cottage. A stone-constructed two storey free-standing cottage with incorporated garage. Unused since the closure of the mine. Externally rather shabby but apparently internally in fair condition. Not Scheduled. Significant potential for adaptive reuse.

Weighbridge house. A small rendered block-built structure adjacent to the mine weighbridge. Internal fittings may survive. Scheduled. Potential re-use as small store as likely to be too small for any income generating activities.

Old stables. Small block-built structure with cement-asbestos sheet roof sited near weighbridge. No conservation works undertaken. Scheduled. Unused. Possible potential re-use as store though currently in poor and deteriorating condition.

Old dynamite and detonator magazines. Small rendered blockwork structures on eastern periphery of site. No conservation works undertaken and doors damaged beyond repair. Currently unused. Not Scheduled. Potential re-use as small stores.

Early miners' chamber. Historically-significant underground miners' chamber excavated into rab, probably the earliest accessible mining feature on the Geevor site. Scheduled. Partially secured during mid-1990s safety works, but works not completed. Under-interpreted and not accessible to visitors. Would benefit from updating of interpretation and sprucing up of interior.

Mine garage. Block-built single storey structure with extensions under a cement-asbestos sheet roof. On the fringe of the core area of the site. Currently leased as a vehicle store. Not Scheduled.

Motorcycle garage. Windowless rendered blockwork building attached to southern side of dry complex. Scheduled. Currently under-used as an informal store. Potential for use as store if contents rationalised.

Dry boiler house. Single storey mass concrete building under a replacement roof. Contains two decontaminated but otherwise un-conserved boilers. Currently unused and not accessible to the public. Scheduled. Some potential for inclusion on the visitor route.

Core store. Single storey lean to extension to Count House/office block. Not Scheduled. Currently houses boxed drill cores plus large amounts of rubbish and other materials. Requires rationalisation of contents. Potential for re-use as office or similar function, or as store building.

Seco huts. Two freestanding single storey prefabricated concrete buildings near mine pond. One is used as an education/meeting room, the second is used as a store building. Scheduled. Potential for expansion of educational use.

Old stores/stables. Single storey building constructed *circa* 1857 in stone under a scantle slate roof and subsequently extended. In core area of the site. Fully conserved in 2007 Currently used as an informal store. Scheduled. Significant potential for adaptive reuse/income generation.

Carpenter's shop. Single storey building constructed *circa* 1857 in stone, currently has a sheet roof. I core area of the site. Limited conservation measures undertaken in 2007. Underlain by unsecured shallow mine workings. Currently used as a timber store. Scheduled. Significant potential for adaptive reuse/income generation.

Sawmill. Single storey timber-framed building with steel sheet cladding and roof in core area of the site. Contains original circular bench saw. Currently unused. Scheduled. Potential for adaptive/educational re-use.

Sawdust store. Small rendered blockwork structure in core area of the site. Currently unused. Scheduled. Limited potential for adaptive reuse.

Mill cycle shed. Small rendered blockwork structure in core area of the site. Currently used for materials storage. Scheduled. Some potential for adaptive reuse as store.

Smiths/Welders Bay. Windowless rendered blockwork structure adjacent to Bottom Fitting Shop and new Table Section. Scheduled. Currently houses locomotives and muckers. Retain as store.

Oil store. Small blockwork structure with mass concrete roof in core area of the site. Currently unused. May require decontamination. Scheduled. Some potential for re-use as store.

Mine café undercroft. Medium sized windowless area below café. Currently used to store pumps and other equipment. Not Scheduled. May need to be retained as large equipment store.

Mine telephone exchange. Small windowless rendered blockwork structure in core area of site adjacent to clock room. Currently unused. Scheduled. Potential for re-use as a store.

Victory winder undercroft. An integral part of the Victory Winder building, containing original brake and control gear. Currently not on the visitor tour. Scheduled. Potential for inclusion within visitor tour, though some limited preliminary works required.

Primary crusher annexe. Steel framed and steel sheet clad structure adjacent to head of mill. Re-roofed and re-clad in 2007. Currently unused. Scheduled. Potential for re-use as a store. Adjacent primary crusher area also unused – this area contains remnant rubbish, is experiencing concrete deterioration issues and contains hazardous areas and features. Probably little potential for use.

Old ore bins. Mass concrete constructed 1930s ore bins adjacent to Victory Shaft headgear. Access via external wooden stairway. Currently unused. Scheduled. Probably little potential for re-use given access issues.

Cone crusher annexe. Rendered blockwork single storey building under a replacement sheet roof adjacent to the crusher/picking belt area of the mill. Currently used for ad hoc storage. Scheduled. Potential for re-use for interpretation or storage.

New Table Section. Large rendered blockwork building in the core area of the site. Re-roofed and re-clad in 2007. Currently unused. Scheduled. Significant potential for adaptive reuse.

New mine laboratory and toilet. Integral with New Table Section building. Scheduled. Currently unused. Potential for adaptive re-use with New Table Section building.

Small building to west of New Table Section. Small windowless blockwork building under a cement-asbestos roof in core area of site. Currently unused. Scheduled. Potential for re-use as store.

Heavy Media Separation plant. Steel framed annexe to mill. Partially conserved and re-clad and re-roofed in 2007. Scheduled. Currently unused due to access and safety issues. Largely uninterpreted. Little potential for access but interpretation could be enhanced.

Newell Dunsford Mill building. Large steel framed structure with replacement roof covering and cladding forming an extension to the mill complex. Intermittently used for demonstrations, particularly in the summer. Scheduled. Potential for formalisation of current use and/or use for siting further interpretation.

Small thickener building. Small timber-framed cement-asbestos sheet clad building over small thickener. Scheduled. Unused and having no current access. Little potential for re-use given size, location and condition.

Sheepbridge building. Freestanding rendered blockwork building to east of mill. Scheduled. Currently used as store.

New ore bins. Large mass concrete structures to east of mill. Roof structures removed. Scheduled. No identifiable re-use.

Old tin floors/Star Circuit building. Integral part of lower section of mill complex, traversed by visitor route, but empty of equipment and uninterpreted. Scheduled. Potential for further interpretation or reinstatement of shaking tables formerly sited here.

Western calciner. Complete Brunton calciner with two integral extensions. Scheduled. Fully conserved in 2007. Currently unused and inaccessible to visitors. Significant potential for incorporation into visitor route.

Old tin floors lunch room. Annexe to Tin Floors to west. Scheduled. Currently used by Guides to store clothing etc. Some potential for re-use.

Old Assay House. Free-standing single storey timber framed and sheet clad building adjacent to visitor route. Scheduled. Conserved but currently unused. Potential for re-use for interpretation or as store building.

Eastern calciner and slimes plant. Conserved calciner building with extensions, though lacking machinery attached to conserved slimes plant with intact plant and machinery. Scheduled. Not on visitor route and currently unused. Potential for access to specialist tours.

Tailings stream building. Small windowless rendered blockwork building with a mass concrete roof in the area below the mill. Contents removed. Scheduled. No potential re-use identified.

Magazine building. Small isolated rendered blockwork building with a mass concrete roof adjacent to the gravel pile. Scheduled. Door vandalised. No contents. No potential re-use identified.

Area to the east of the weighbridge and southern part of access road. A relatively large linear area to the south of the visitor car park. Not Scheduled. Originally earmarked as a potential events area, but scrubbing in due to lack of vegetation management. Potential events area if scrub management undertaken.

Area between the mill and Boscaswell (Area D). Former gravel sizing, storage and sales area, now largely cleared of material. Underlain by main sewer. Gradually scrubbing in. Unused. Not Scheduled. Uncertain potential.

11.4 Appendix 4: Summary building condition report

As part of this Plan, a summary building condition survey was undertaken in late 2013 to identify issues requiring attention. Its results were discussed with mine staff, who added further issues which they had identified. An attempt has been made to prioritise issues requiring attention, either as part of the maintenance and repair scheduled, or as stand-alone projects. Where features are identified as being *at risk* this indicates that their condition impacts negatively on the condition of the Scheduled Monument designation and may, either individually or collectively, lead to Geevor being placed on English Heritage's Monuments at Risk Register.

Wethered Cottage

- Unused for many years.
- Episodes of vandalism.
- Crack in south wall.
- No access at present as doors and windows are boarded up. Internal condition unknown.
- **Priority - project**

Geevor social club

- Cement asbestos sheet roof covering.
- Windows and doors boarded up.
- Holes in roof.
- Dormant dry rot noted in 2007.
- Unused for many years.
- Internal condition unknown, though understood to be very poor in places.
- **Priority - project**

Wethered power house

- Currently unused.
- 2007 paintwork has deteriorated.
- Internally refurbished as laboratory.
- **Priority - project**

Wethered winder building

- Currently unused.
- Rubbish accumulating inside.
- Dispose of matchstick construction mine model?
- Cladding plank missing on west side.

- Contains original winding engine which must be preserved *in situ* in any reuse of the building.
- **Priority - project**

Wethered smithy building

- Needs re-pointing, especially on northern elevation.
- Pendeen Gig Club assumed to be paying a peppercorn rent to PCH. This may block other potential re-uses of this building.
- **Priority - project**

Weighbridge building

- Unused for many years.
- No access – doors and windows boarded up.
- Old built up felt roof.
- No obvious adaptive reuse identifiable. Further deterioration likely.
- **Priority - low**

Old stables (near Ladderway Shaft)

- Cement asbestos sheet roof.
- Window blocked in.
- Timber door deteriorating.
- Surrounding area scrubbing in.
- No adaptive reuse identifiable.
- Further deterioration likely.
- *At risk*
- **Priority - low**

Explosives magazine near Ladderway Shaft

- Lightning conductor mast has collapsed.
- Surrounding area has scrubbed in – no access.
- Further deterioration likely.
- *At risk.*
- **Priority - low**

Gever Shaft dump and area behind weighbridge

- Ongoing gorse and bramble scrub development.
- **Priority - low to medium. Address by use of grounds staff or local contractor**

Entrance road

- Significant potholing has developed (partly rectified 2014).
- Subsiding mine feature in roadway untreated for three years (remediated 2014). Others may develop.
- Off-putting to visitors.
- **Priority - medium to high**

Entrance road to visitor carpark

- Significant ridging has developed making the gravel road surface very uneven and potentially damaging to vehicles. Partly rectified.
- **Priority - high**

Magazines at back of coach park

- Cement asbestos slate roofs.
- Interiors part filled with rubbish.
- Doors no longer secure.
- Surrounding area scrubbing in.
- No adaptive reuse identifiable with the exception of use as small stores.
- **Priority - low**

Underground chamber

- No public access.
- Interior needs sprucing up. Consider adding some interpretation?
- Temporary steel plate lid on 'chimney' should be replaced with armoured glass to light interior.
- **Priority - project**

Mine garage

- Cement asbestos sheet roof.
- Deterioration of door timber and ironwork.
- Likely to remain occupied by Jerry Harvey for the foreseeable future, blocking any other potential re-uses.
- **Priority - low**

Office block

- Failure of 2007 paint on soffits and other timberwork.
- Failure of paint on windows.
- Corrosion to steel windows.
- Broken window in guide's room (probably due to subsidence (see below).
- Subsidence cracking in south elevation adjacent to visitor tour doorway, as well as eastern elevation, possibly due to subsidence of outcrop workings on Borlase's Lode. Those identified in 1994 were secured near surface, but deeper subsidence may be taking place. Middle Adit runs beneath this area on a lode structure parallel and to the west of that developed on Borlase's Lode. Telltales need to be put on the subsidence cracks as a matter of urgency. This corner of the building may need to be underpinned and the cracks stitched and filled.
- Detached gutters to north.
- Suitability of archive storage facilities needs re-appraisal.
- Un-used room containing mine models within office block.
- Core store is filled with rubbish and can't be entered.
- Most downstairs rooms damp.
- Downstairs strong room contains very mouldy archive materials.
- Mine wireframe model is deteriorating and needs some repairs.
- **Priority - medium to high**

Assay house

- Rusting nailwork to planked areas.
- Failing paint on timberwork.
- Rot in window timberwork.
- Leak in roof.
- Some guttering missing
- **Priority - medium to high**

Union hut

- Ceiling sheets very damp.

- Windows have minor leaks
- **Priority – low to medium**

Old telephone exchange

- Unused.
- Minor subsidence crack.
- **Priority - low**

Clock room

- Failing paint on windows.
- **Priority - low**

Mine rescue and 1st aid rooms

- Roof paint system completely failed – requires fairly urgent repair/replacement.
- Grass growing in gutter.
- Cracking concrete in upstand section between mine rescue room and Victory winder house.
- Damp in walls.
- **Priority - medium to high**

Steam winder building

- Detaching render.
- Failure of waterproofing roof paint. Requires repainting to weatherproof the building.
- **Priority - medium to high**

Top fitting shop/Hard Rock museum

- Detaching concrete treatment on portal frames.
- External signs have begun to delaminate.
- Crack in gallery floor.
- **Priority - low to medium**

Drill shop

- Corroding ironwork on doors.
- **Priority - low**

Electrical shop, Loco repair shop and wagon repair shop

- Contents of electrical stores need rationalising.
- No access to wagon repair shop.
- No access to loco charging bay.
- **Priority - low**

Dry

- Buildings to rear (south) of the dry including motorcycle garage have been nailed up since 2007. No check on contents or condition made since then.
- Cracked roof sheet in corridor to landing house.
- Hole in new roof in area adjacent to Landing House.
- **Priority - low**

Victory winder building

- Window paint failing.
- Rot in timberwork at base of entrance door.
- CCTV camera mount broken.
- Paint on interior south wall failing.
- Rust showing on diagonal roof frames.
- Water penetration to flat roof of room adjacent to top fitting shop office.
- Rot in window frame in south elevation.
- One window frame in the south elevation is disintegrating.
- No public access to undercroft area.
- **Priority - high (windows and flat roof), elsewhere low to medium**

Compressor house

- Crack between portal frame and blockwork infill in north east corner.
- Failed concrete lintel over entrance door.
- Corrosion to all Crittall steel windows.
- Mild rust developing on steel roof trusses.
- Internal paintwork badly degraded.
- Corrosion to air receivers and pipework and to nearby water storage tanks.
- Bird droppings are an issue. Access between roof and wall plate?
- **Priority - high (door), elsewhere medium**

Victory Shaft headgear

- Corrosion to top deck plates.
- Corrosion to handrails.
- Corrosion to steelwork within interior of shaft barrel.
- **Priority - high (most rusty elements), elsewhere medium to low**

Old ore bins

- Some 2007 concrete treatment detached at west side on south end.
- Spalling concrete over rusted reinforcement in two support legs adjacent to primary crusher pit.
- Large amounts of rubbish internally at ground level in pits associated with primary crusher.
- **Priority - low to medium**

Top reservoir

- Major leak – water flowing out of roadway surface downslope.
- **Priority - medium**

Seco Huts and paint store

- No issues identified.

Bottom fitting shop

- Significant penetrating damp to south wall of eastern office.
- Possible roof leak inside main door to north of building.
- **Priority - medium**

Carpenter's shop

- Repointing needed to all exposed elevations.
- Issues with floor stability – shallow mine workings below.

- Contents of building need further rationalising.
- **Priority - medium to low**

Old stores/stables/Jim Vincent's store

- Window paint lost, rot developing.
- Building underused (currently informal store).
- **Priority - high (windows), elsewhere medium. Possibly project?**

Café and shop

- Undercroft areas used as stores. It may not be possible to accommodate large items such as pumps stored here elsewhere.
- Shop wall internal paintwork flaking badly, especially on northern elevation. South elevation damp, rusting to cable conduits, leak in western window in southern elevation.
- **Priority - low**

Oil store

- Contents cleared but building not decontaminated. If the café is to be extended the oil store may need to be demolished.
- **Priority - low**

Sawdust store

- Door fixings failed – boarded up. Contents unknown.
- **Priority - low**

Mill bicycle shed/belt store

- Doors need repainting. Contains large quantities of loose vermiculite and cat litter which should be cleared and disposed of if not required.
- **Priority - low**

Locke Stamps

- No major issues, but ironwork would benefit from protective coating.
- **Priority - low**

New Table Section

- Currently unused.
- Small annexe to west is unused and has failing cement asbestos roof sheets.
- **Priority - project**

New Laboratory

- Currently unused. Some of David Wright's equipment stored here.
- **Priority - project**

HMS plant area

- No public access.
- Under-use of eastern section of building.
- Failing floor plates and structural steel members.
- Internal conveyor beginning to disintegrate.
- **Priority - medium**

Old assay hut

- Boarded up and unused since repairs in 2001.
- **Priority - low, possibly project**

Old tin floor annexe

- Failing window paint.
- Used for storage of tools and equipment.
- **Priority - low**

New tin floors

- Very badly corroded steel roof supports.
- Concrete failures on some purlins leading to corrosion of reinforcement.
- Areas off visitor route used for storage of rubbish and materials.
- *At risk*
- **Priority - high (structural works), other elements low**

Return water pump house

- Blown concrete render and cracking on north elevation.
- In use by SWW. No lease agreement at present.
- **Priority - low**

Thomas' tanks

- Houses overflow tanks for main sewer. Rented to SWW.
- **Priority low**

Star circuit building (area above new tin floors, includes old tin floors)

- Possible minor subsidence on eastern elevation.
- Failed hinges on large door in eastern elevation (boarded shut).
- Corroded corrugated steel sheet roof.
- Drainage issues.
- Roof leak at western end of final tabling area.
- Deterioration of timber tank.
- Some rubbish stored in the lower part of this area.
- Deterioration of rare Janney Classifier.
- Deterioration of tables and other fittings.
- Deterioration of original very rare wooden flotation cell.
- Upper area generally under-used.
- Supporting timberwork out of vertical
- Corroded bases and failed concrete to steel legs supporting hoppers.
- Early rectangular wooden tank beginning to disintegrate.
- **Priority – low to medium**

Western calciner

- No public access at present.
- Lost roof slate.
- **Priority - project**

Eastern calciner and slimes plant

- No public access at present.
- **Priority - project**

Building over small thickener

- Cement asbestos cladding.
- Unsafe timberwork.
- Corrosion to agitator.
- Collapsed timber launder adjacent.
- **Priority - medium**

Medium and large thickener

- Corrosion to agitators.
- *At risk.*
- **Priority - medium**

Newell Dunsford mill building

- Leak in roof at northern end (water on floor).
- Corrosion to steel cladding to doors to north.
- Under-use of building.
- **Priority - low**

Middle table section

- Deterioration of table decks, some in significantly poor condition.
- Unused area immediately upslope containing analysis cabin, hoppers (and mezzanine level) and shaking table bases on original site of pneumatic stamps.
- Corrosion of legs to hydrocyclones on mezzanine platforms – one is above visitor route.
- Mill office currently unused.
- Modern flotation cells need better display.
- Deterioration of old wooden flotation cell.
- Significant deterioration of concrete walling adjacent to external doorway adjacent to table floor office and stores.
- *At risk (tables and other equipment)*
- **Priority - medium to high**

3rd floor

- Leak in roof (water on floor).
- Badly cracked roof sheet.
- Corrosion to rake classifier components.
- *At risk.*
- **Priority - medium (classifiers)**

Tailings stream sample house

- No maintenance works since mine closure.
- No surviving machinery.
- **Priority - low**

Explosives magazine

- Door vandalised. Lightning conductor has collapsed.
- **Priority - low**

Trewellard Zawn structures

- Major collapse of zawn walling.

- Unmanaged water flows (sewage and surface water from settling tank both need to be addressed. Surface water flows from settling tanks to be addressed March 2014).
- *At risk.*
- **Priority - high**

Machinery (open air sites)

- Lanivet Stamps components not displayed or interpreted.
- Bigelow crusher needs new base timbers or plinth, also repainting and interpreting.
- Rusting equipment on concrete plinth by clock room needs consideration/possible triage.
- **Priority - project**

Underground tour

- Rock Shaft collar needs further underpinning.
- Poor ground adjacent to Mexico Shaft needs permanent stabilisation.
- Poor ground adjacent to Footway Shaft needs support measures.
- Pump sumps will need regular silt clearance
- **Priority - medium (possibly project) plus regular maintenance**

11.5 Appendix 5: Potential suggestions for enhancing site income generation

Both the owners and the managers of Geevor Mine have long term aspirations to enable the site to be financially sustainable, to retain the authenticity of the site, and to develop the already high quality visitor attraction to enhance the visitor experience and grow visitor numbers.

However, it is also recognised that there are some areas of the site which are currently unused or under-used and which have the potential to be utilised to enhance site revenue, to bring currently deteriorating structures back into good condition and ensure their future maintenance. This particularly (but not exclusively) applies to the buildings making up the Wethered Shaft site. Whilst these are within the Cornish Mining World Heritage Site, retain much of their authenticity and are very much an important part of both the historical and current Geevor site, they are not statutorily designated, and could therefore be adaptively reused to a greater degree than those within the core area of the site to the north. There is also the potential for new uses for some of the buildings in the core area of the site, though these would have to be carefully managed, given the Scheduled status of this area and the importance of retaining their authenticity.

The SWOT analysis and a draft 'potential project' list drawn up by Pendeen Community Heritage have identified some ways in which the visitor offer could be further diversified and broadened, and ways in which visitor revenue and site income could potentially be increased. Some of these proposals could probably be realised in the short to medium term, especially if suitable grant assistance could be identified. Others may remain long term desires, some may never be achievable, and others may be judged unsuitable for a nationally designated site. Such proposals should not be confused with maintenance and repair priorities, as they should, unless achievable using on-site resources, be pursued through grant-aid, rather than the annual maintenance budget.

The following have emerged as suggestions potentially worth further consideration:

- Economic reuse of the Wethered Shaft buildings. A commercial options appraisal has been carried out but no immediate preferred option was identified. In the past, these buildings have been suggested as possible candidates for re-use by an organisation such as the Youth Hostels Association, providing a bunkhouse, study centre and warden's accommodation. They might also be suitable for serviced offices/workshops, given the availability of high speed broadband in this area since 2013. The creation of additional heritage facilities should not be considered,

as this would be likely to draw visitors away from the main Geevor site. Above all, the emphasis should be on income generation, as this would increase the financial resilience of the Geevor site as a whole. Cornwall Council is currently looking to offer the site for development with restrictions on the types of use which would be allowed to see what emerges from the market.

- Seeking ways in which shop and café revenues could be enhanced. Both outlets are currently relatively small, especially the café, which rapidly reaches capacity during the peak months, and which suffers from inherent issues with throughput given the relatively small size of the kitchen and the design of the service area. Consideration should be given within the shop for further diversifying the current stock range, especially if suitably attractive locally-sourced or sponsored products could be identified for sale there. Refurbishment of these buildings, which have received little attention since 1996, would be advantageous.
- Utilising currently unused or under-used buildings within the core spend area of the site adjacent to the café and shop – particularly the Old Stores/Stables and Carpenters' shop immediately opposite them. These may have significant revenue generating potential, though this should not be achieved by compromising their authenticity.
- Finding new uses for other unused or under-utilised structures on the site, in particular the New Table Section. This large building was conserved and made watertight in 2007, but has remained empty and unused since. A preliminary options appraisal for this building did not produce any proposals which appeared to be viable or appropriate given the funds available at the time, though the suggestion that it might be converted into a flexible performance and arts space is probably worth further consideration. Grants may be available to facilitate this proposal. However, other options should be considered to determine their viability, economic and other benefits and likely impacts, including those on the operation of the site. Similarly, as the Newell Dunsford mill area has become a de facto demonstration space, it might be worthwhile considering whether grants might be available to formalise this and fund the purchase of seating, equipment, the installation of a power supply and so on.
- Extension of the current visitor tour to additional structures has been suggested, in particular to the western calciner, winder undercroft and slimes plant. Access to the western calciner would require some form of steps to the external door, but this could be constructed in a fashion which would not impact on the scheduled structure. Access to the upper floor of this building would not be possible, but virtual access could be achieved using the photographic record made during the 2007 HLF funded conservation works. Access to the winder house undercroft would require a preliminary risk assessment and possibly some small-scale safety works, including enhancing the existing lighting. Access to the slimes plant would be desirable, but should probably be considered in the context of specialist tours, rather than integration into the standard visitor tour.
- The Hard Rock Gallery has the potential to be used for the staging of more frequent exhibitions, particularly those which might have revenue generating potential. The principal issue with this proposal is that exhibitions are currently arranged and mounted by the Curator; an enhanced concentration on this activity would detract from the Curator's ability to undertake other important tasks, including gaining full Museum Accreditation status for Geevor and cataloguing the artefacts on the site.
- Extensions of or additional underground tours have been proposed since 1994, particularly on Third Level, though mine staff have also suggested further extensions of the existing Wheal Mexico Shallow Adit tour further inland to increase its capacity or the linking of the existing tour route vertically downwards via Old Mexico Shaft and/or Mexico Footway Shaft to Middle Adit. The former might not be possible, as there would be no return loop for visitors beyond the

current inland extent of the tour. The latter proposals incorporate considerable unknowns, which may well rule them out and would inevitably incorporate ladder climbing. A third level tour would be expensive to establish, but would result in by far and away the best and most attractive underground visitor tour on any site in Cornwall, and would almost certainly boost visitor revenue considerably. Much of the preliminary feasibility study for such a proposal has already been undertaken.

- Restoring the steam winder to operation. Undoubtedly, a working steam winder would be an attractive additional feature of the site. Given that the winder was converted to compressed air operation to serve as a capstan engine during the period when the mine was operational, this is a feasible option. Power options could include electricity (as at the National Trust's Michell's Shaft at East Pool and Agar, Pool) – this being the cheapest option, compressed air (a compressor on site would enable other machinery to be brought to life, though might be expensive to operate and would have to produce large volumes of compressed air to run the steam winder for more than a very short period of time), or steam (probably not feasible, given the expensive installation and operational costs, however desirable).
- It has been suggested that it would add to the visitor interest of the site if a section of tram track was laid out so that battery locos hauling wagons could be run on it. Whilst this project would add a dynamic element to the site which would probably generate visitor interest, there are problems with this proposal. No suitable level part of the site can be identified which is within the core area of the site but not in an area which is designated as a Scheduled Monument; inauthentic track laying is likely to be unacceptable to English Heritage. None of the loco's batteries currently on site has been charged in over two decades; new batteries are very expensive and there may be significant H&S issues with the operation of a tram train in an area to which the public have access.
- There is a need to undertake significant refurbishment of equipment, particularly within the mill complex. This proposal relates most particularly to the shaking tables, rake classifiers and hydrosizers, which have deteriorated to the point where the first and second are in danger of deteriorating to the point where they will inevitably require large-scale replacement of components, including some linoleum deck coverings and riffles (in the case of the shaking tables), and steel plate (in the case of the rake classifiers) if they are not to disintegrate, greatly reduce the authenticity of the site as a whole and badly damage some now-unique machinery; in the third case, advanced corrosion of the steel legs holding up these machines will, in one instance at least, threaten visitor safety. Grants should be sought to achieve this aim as a matter of urgency.
- There is the potential for the resources represented by the artefacts and archives making up the Geevor collections to create travelling exhibitions in order to raise the profile of the site at other venues and at events. An initial suggestion is to utilise the material brought together for the Cousin Jack exhibition (now dismantled). This proposal meshes with one of the key threads of the Cornish Mining WHS Management Plan and could probably be created at a relatively low cost. The range of materials, archives and artefacts held at Geevor is considerable and diverse, and it is probable that further approaches of this type utilising the resources available at Geevor would work well and be relatively easily achievable. Some thought might be given to bringing together themed exhibitions bringing together artefacts, copies of archival material and extracts from recordings held in the Oral History Archive to achieve these aims.
- Re-interpret the Geevor underground model utilising computer controlled lighting. This proposal has been suggested several times, and might well make better use of this almost unique artefact, and enable visitors to better understand the topographical and historical context within which Geevor operated. Modern computer controlled systems now make this proposal far more feasible than in the past, and would turn an artefact which requires active input from an experienced

guide to achieve an appropriate level of understanding into something which could be achieved at the push of a button by a visitor. It should be noted that the physical fabric of the model requires urgent specialist conservation and repair whether or not this proposal is followed up.

- Developing further operational links with the National Trust at Levant (in particular) to develop shared interpretation, ticketing and events, such as the already developed Behind the Scenes tours.
- Further enhancement of the access to the site, in particular through road repairs and surfacing. This proposal should be considered a very high priority, given the likely impact on visitor income should this roadway deteriorate further.
- The creation of an outdoor performance space in the low-lying area between the western calciner, the new table section and the mine access road. Care will need to be taken to ensure that the visual effects resulting from any re-surfacing of this area does not reduce the authenticity of this part of the site.

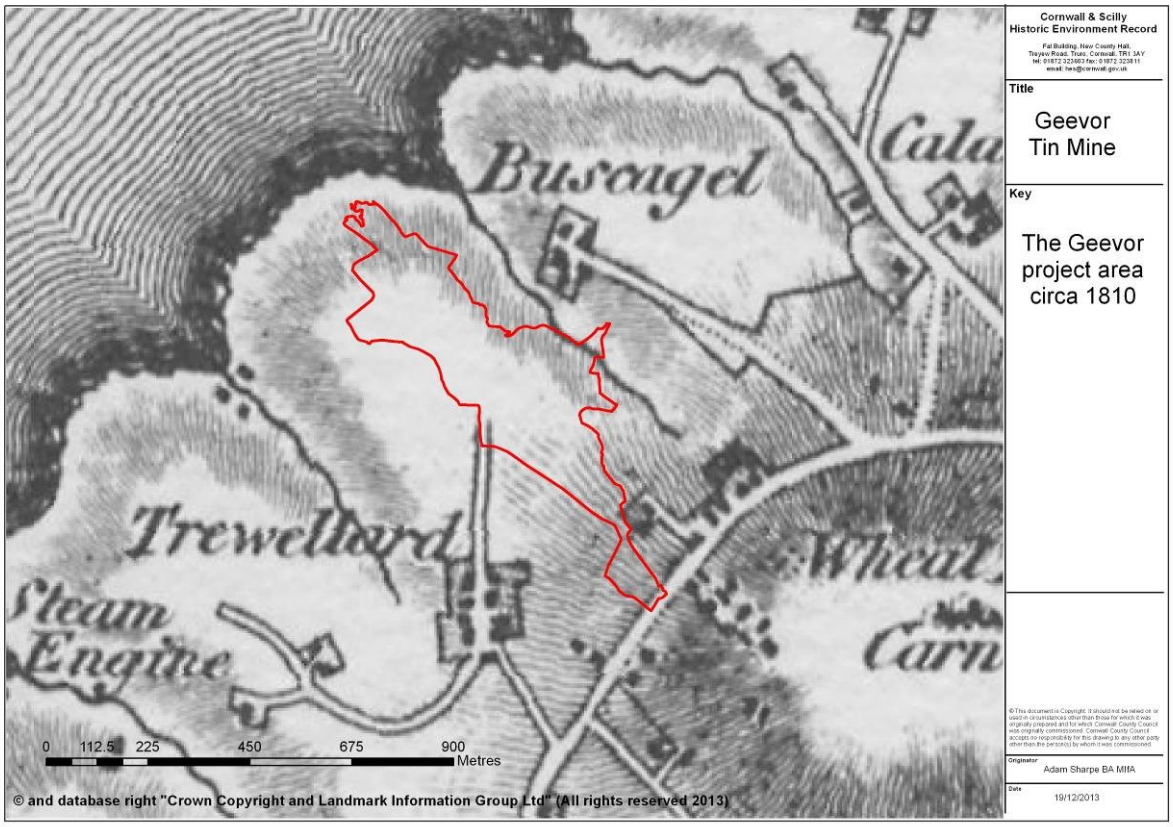


Fig 3. The project area circa 1810.

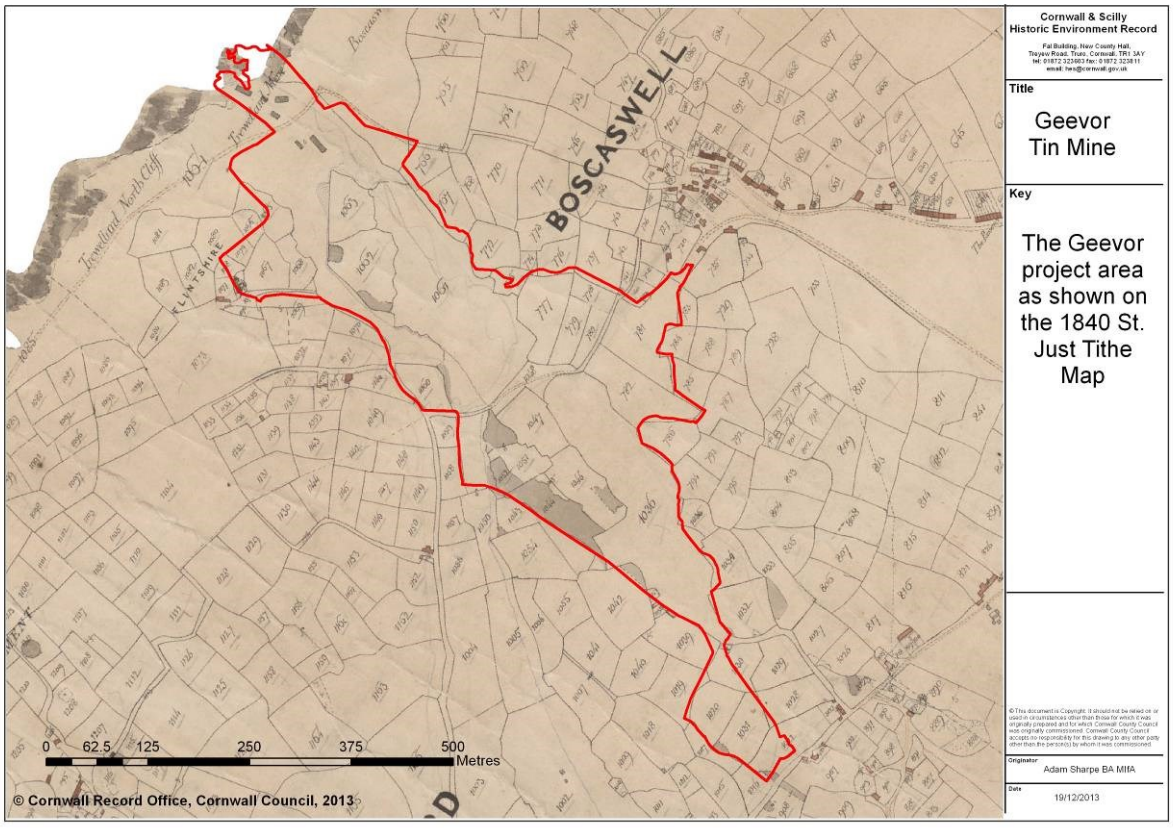


Fig 4. The project area as shown on the 1840 St. Just Tithe Map, prior to the establishment of North Levant. Note the many smallholders' fields in the area surrounding the site.

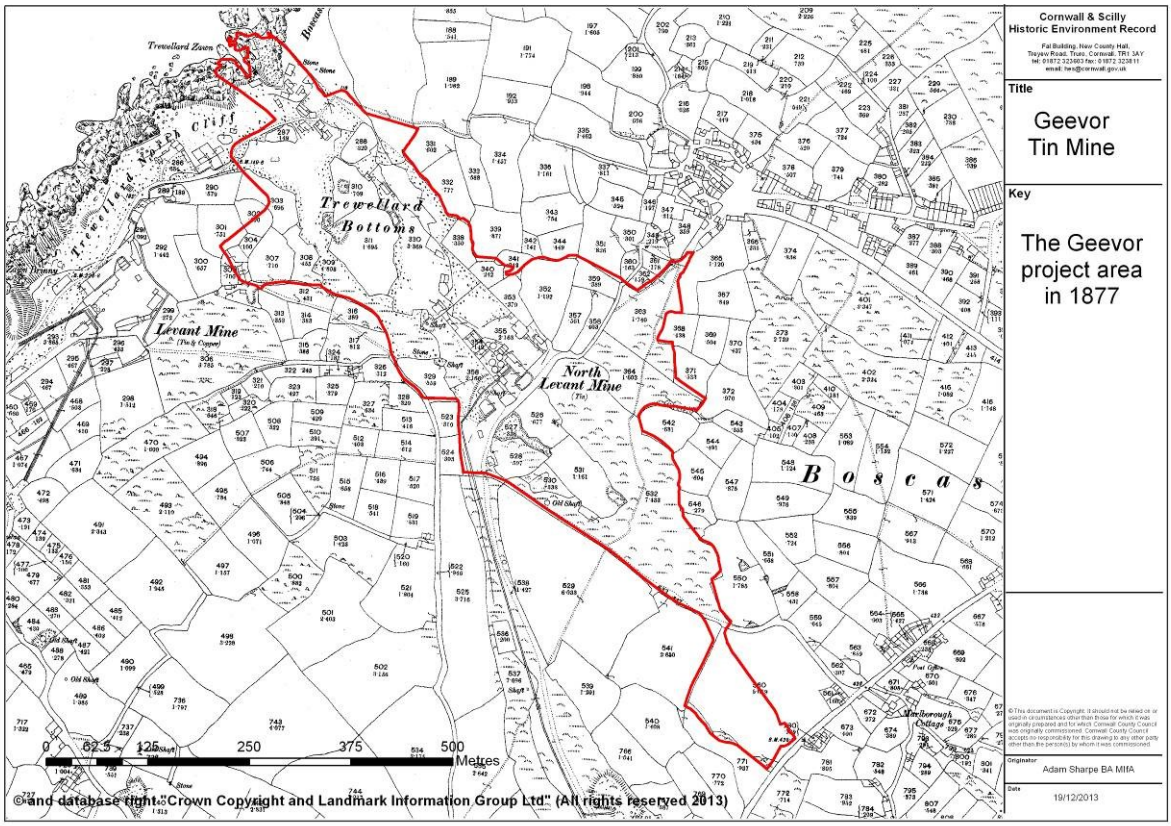


Fig 5. The project area as shown on the circa 1877 OS 25" to a mile mapping.

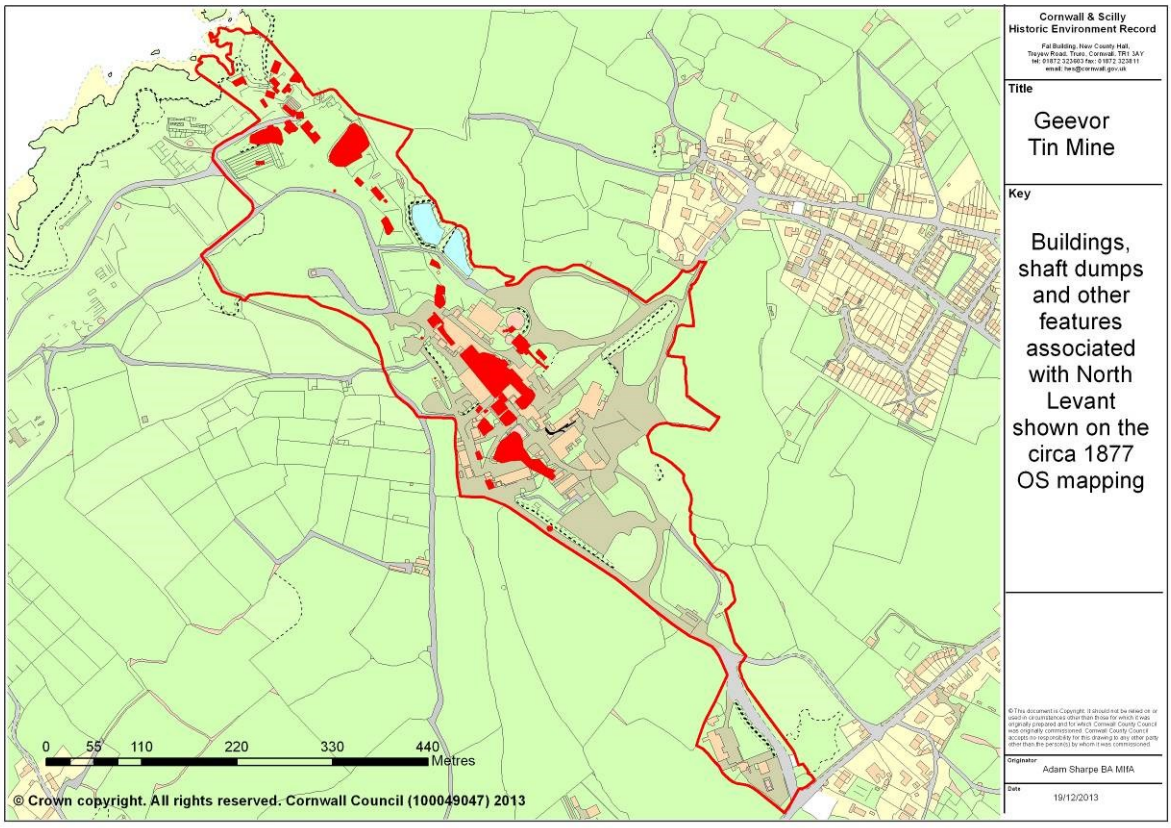


Fig 6. Features associated with North Levant shown on the 1877 OS mapping. Note the mill and burning house (centre) and the scatter of small dressing floor features further down the valley.

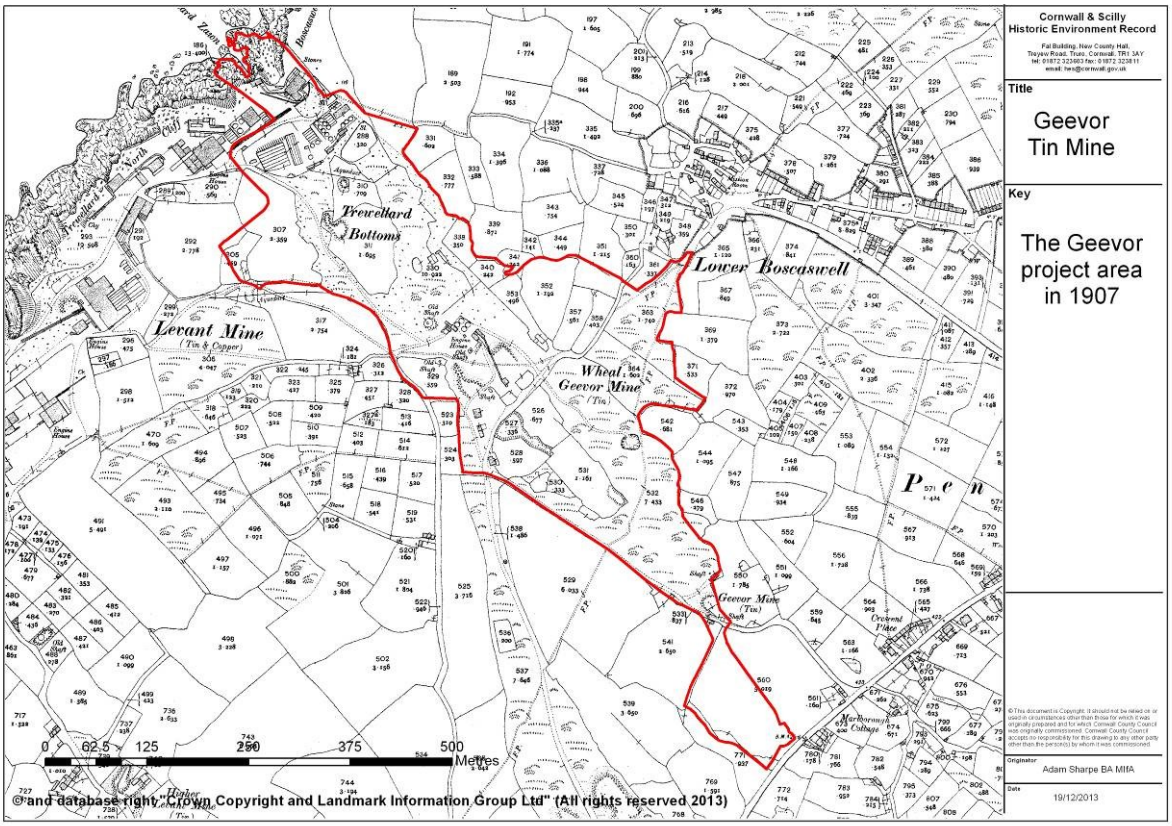


Fig 7. The project area circa 1907, showing the site around the period when Geevor Mine was first established.

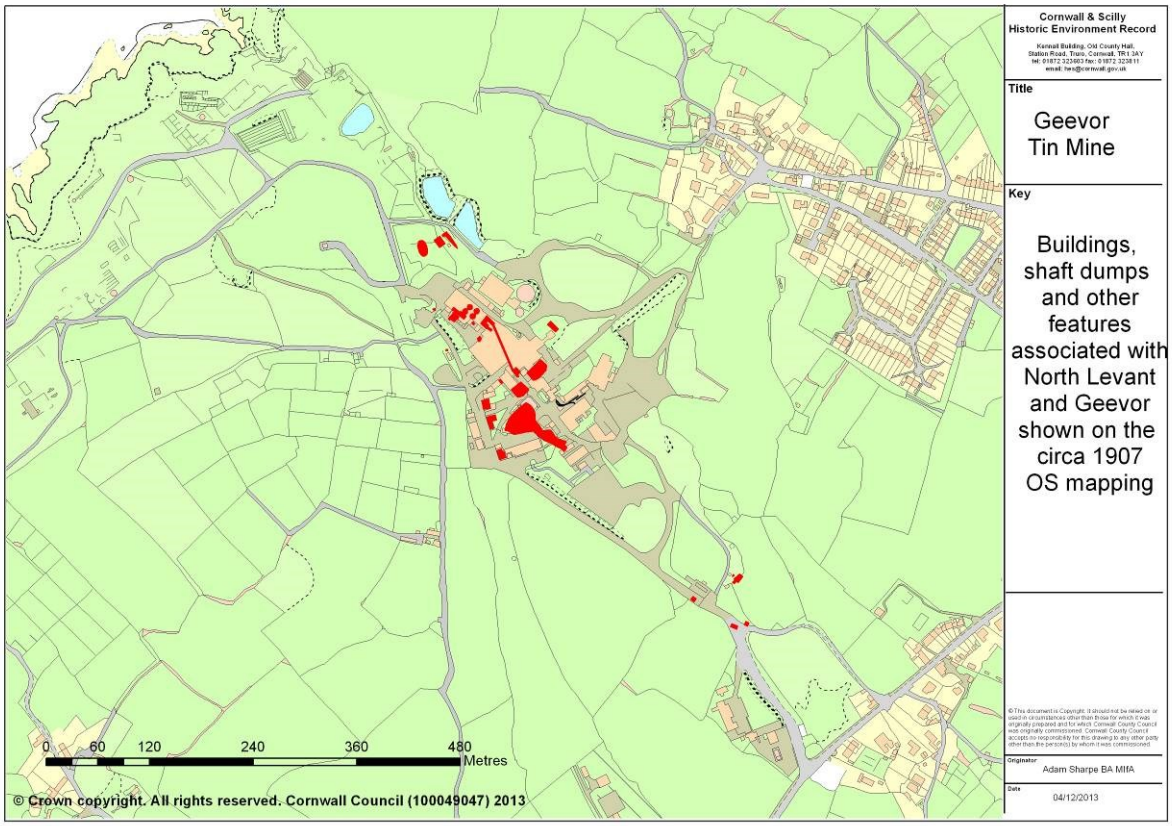


Fig 8. Features associated with Wheal Geevor in 1907, including the early stages of the mill, the stables, carpenters' shop and power house.

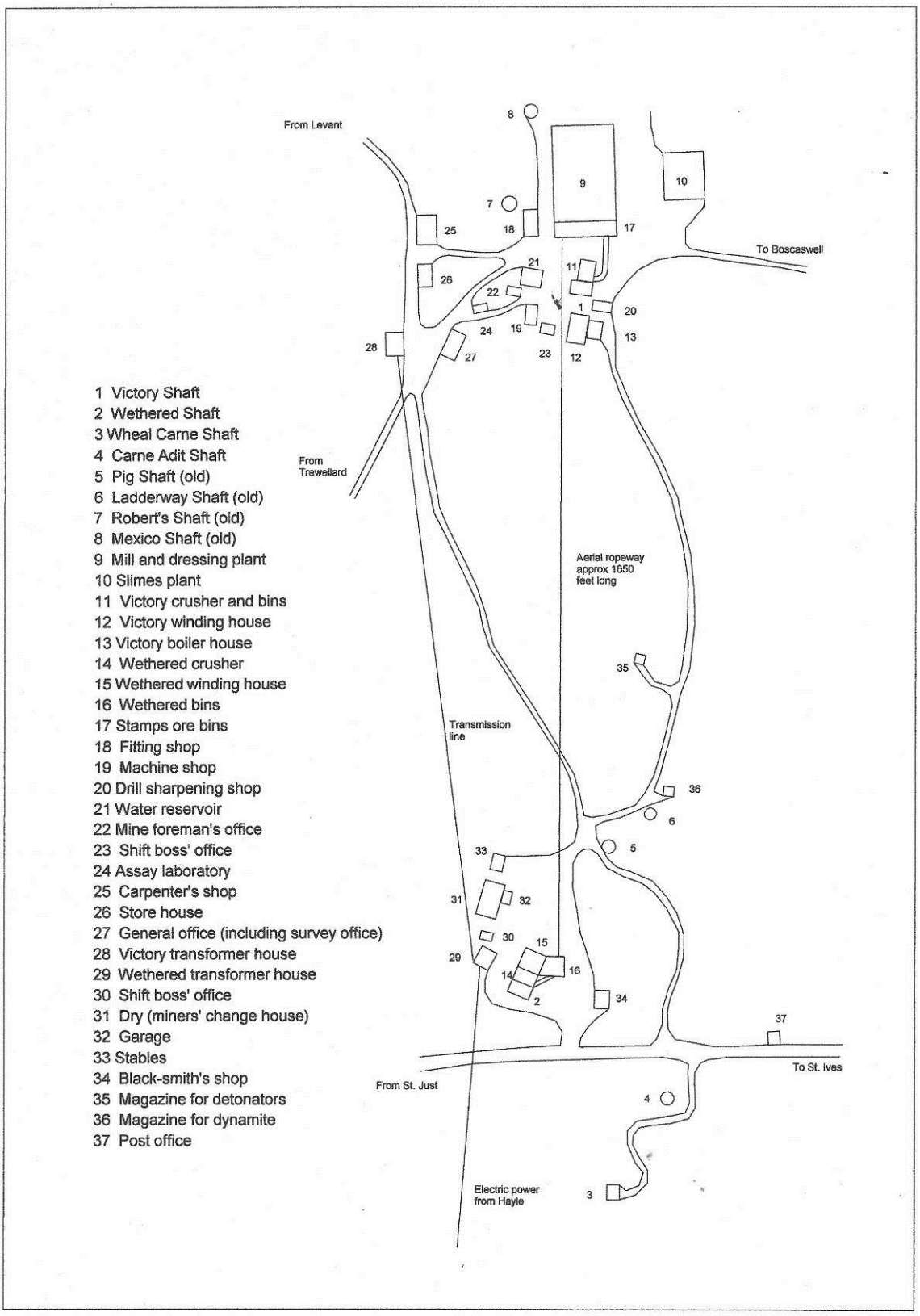


Fig 9. A 1937 sketch plan of the Geevor site, identifying the shafts and buildings on the mine at this date.

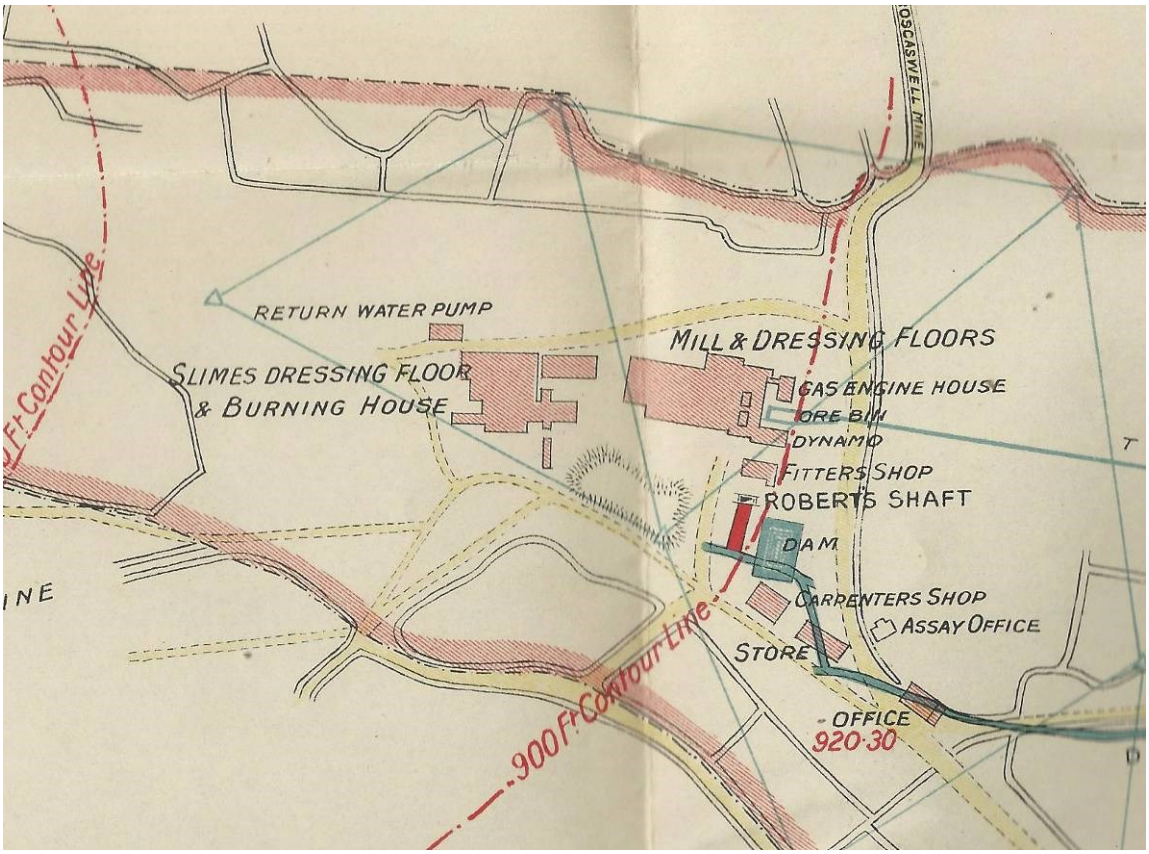


Fig 10. A plan of the core area of the Geevor site dating to the early 1930s.

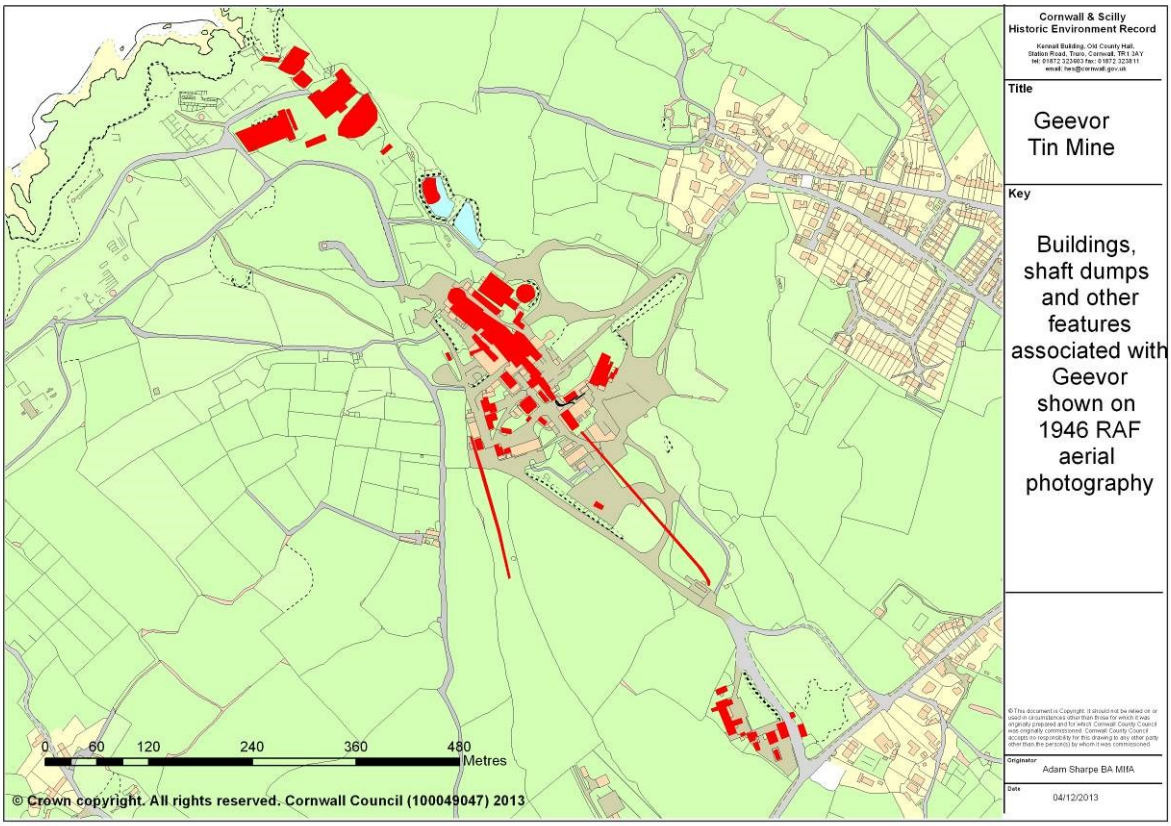


Fig 11. Mining features shown on a 1946 RAF aerial photograph, showing the considerable expansion of Geevor by this date.

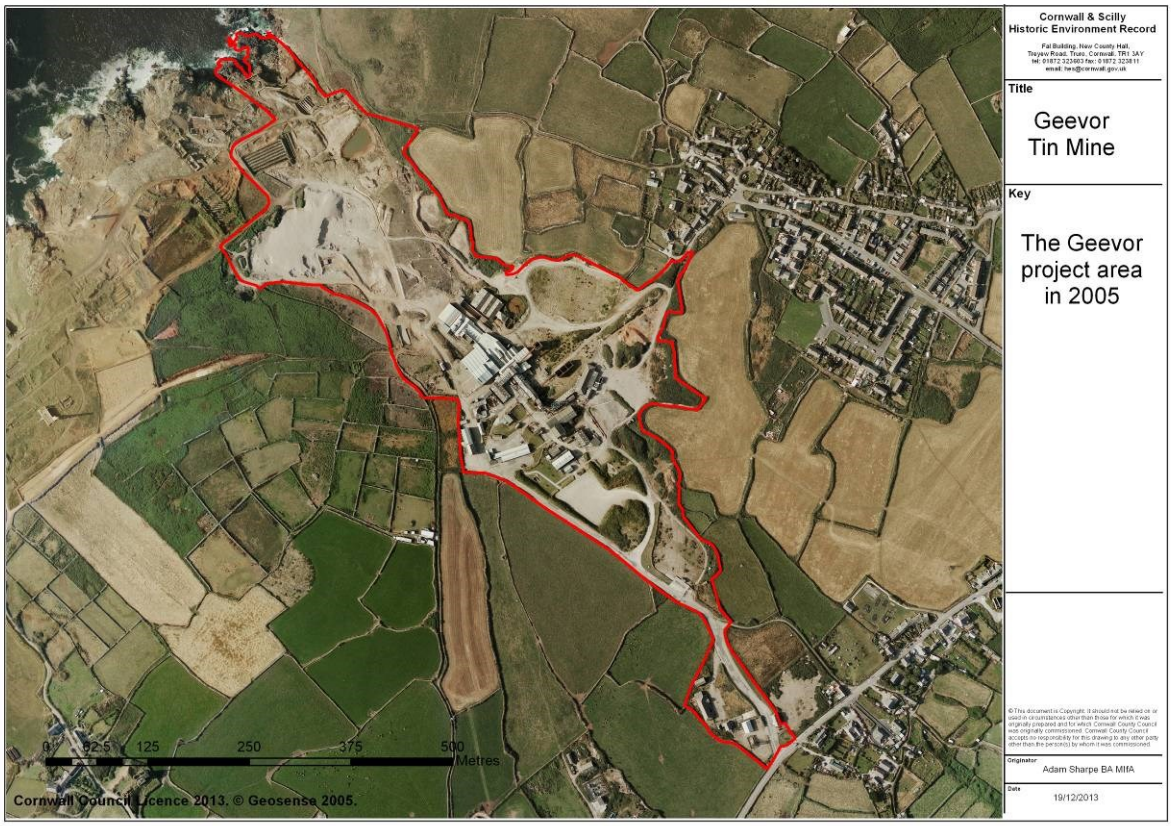


Fig 12. The Geevor site in 2005, a decade and a half after the closure of the mine.

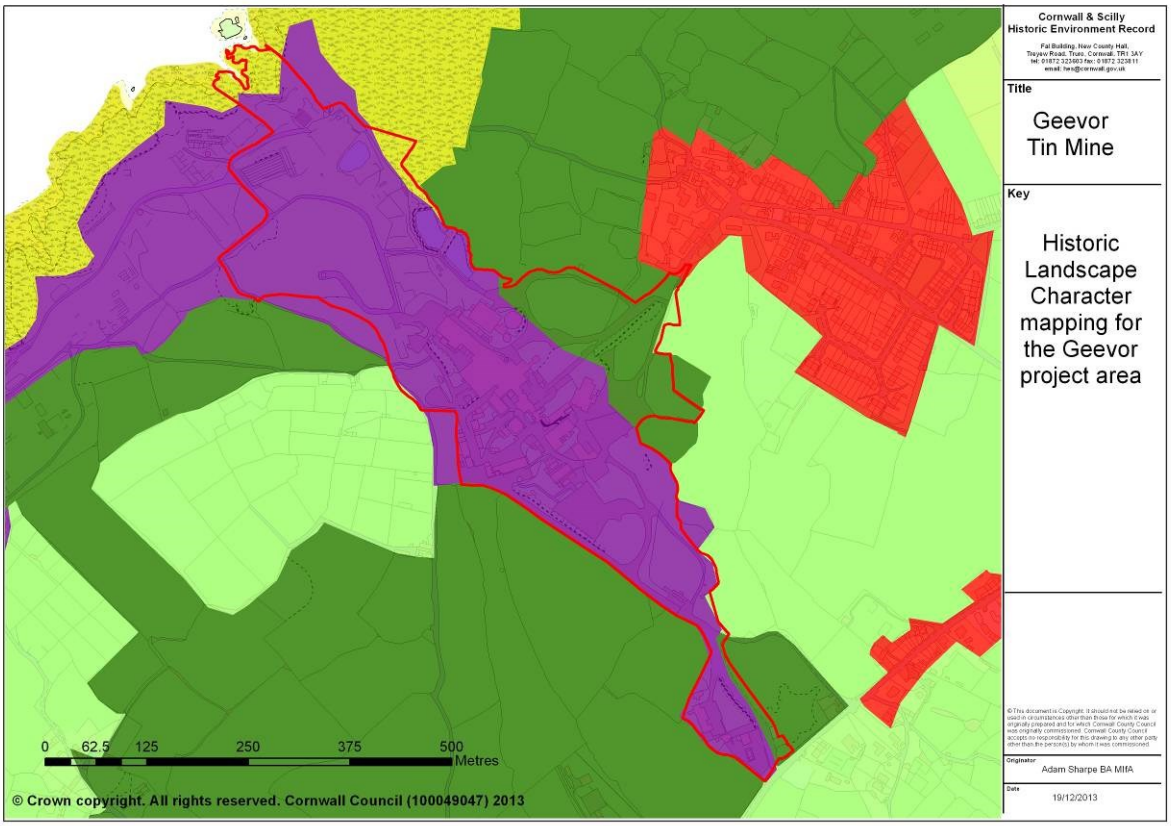


Fig 13. Historic landscape characterisation for the Geevor landscape. Purple denotes areas whose character is predominantly industrial.

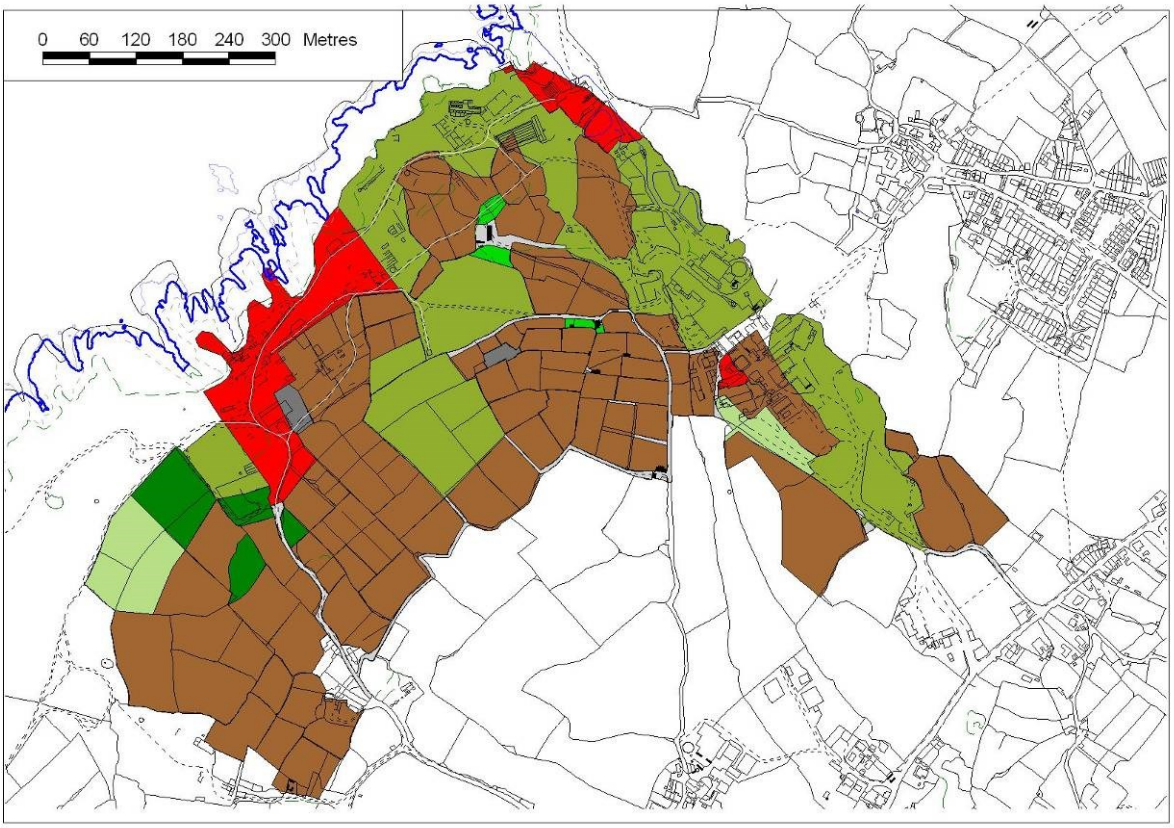


Fig 14. Land use in the landscape around Geevor and Levant in 1840. Red – industrial, brown – smallholdings, green – rough land.

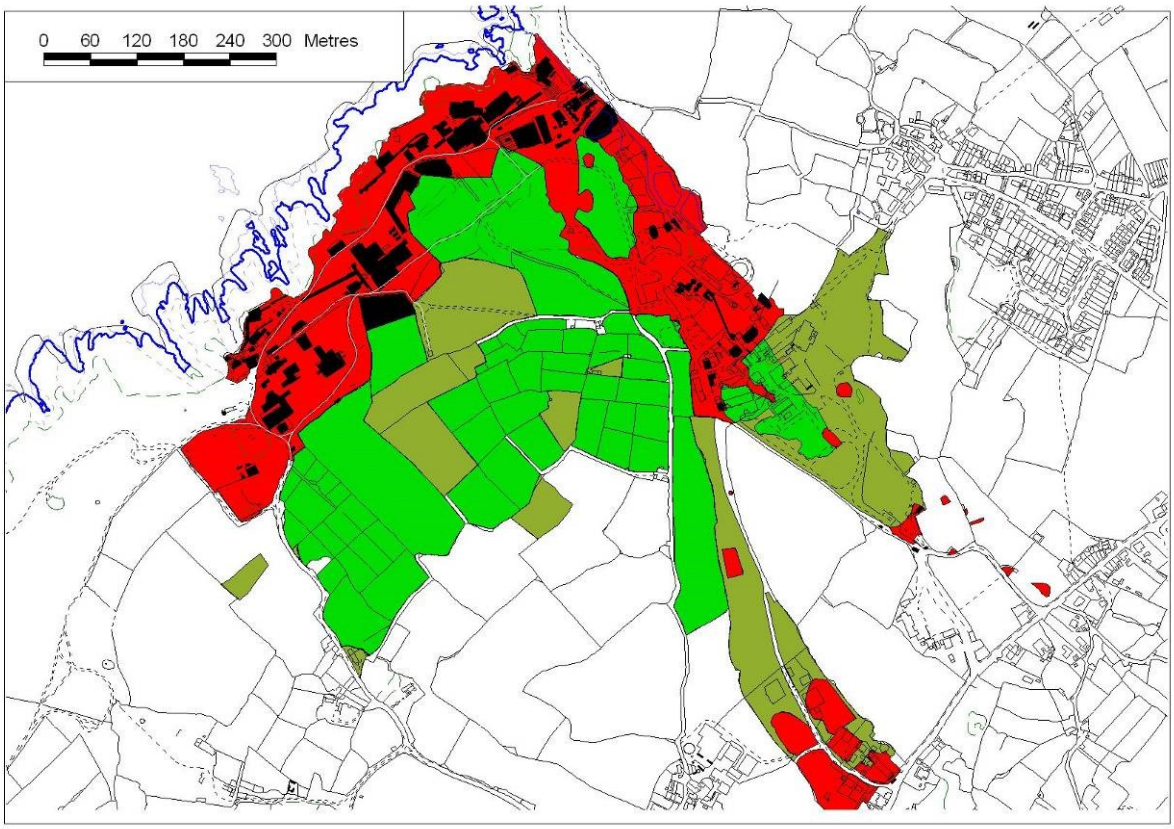


Fig 15. Land use in the landscape around Geevor and Levant in 1908. Red – industrial, bright green – smallholdings, mid green – rough land.

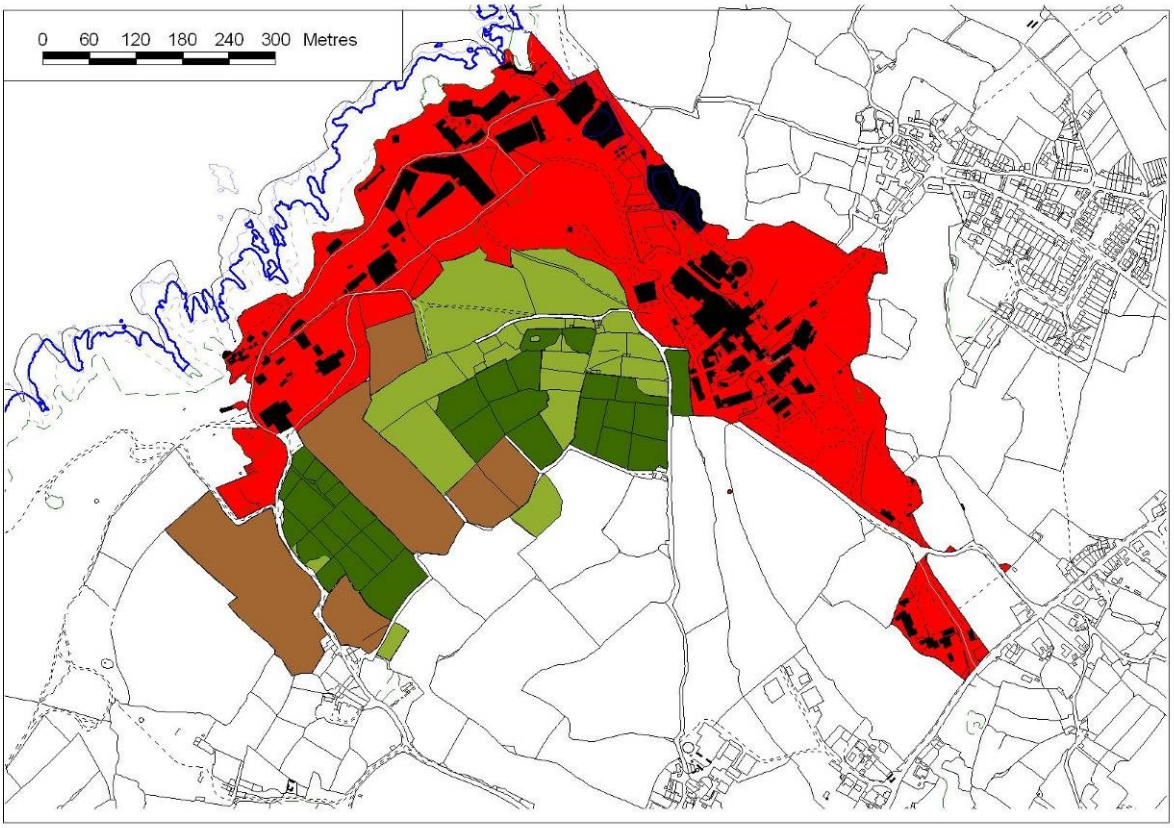


Fig 16. Land use in the landscape around Geevor and Levant in 1973. Red – industrial, dark green – actively farmed, pale green - reverted smallholdings, brown – 'improved' smallholdings.

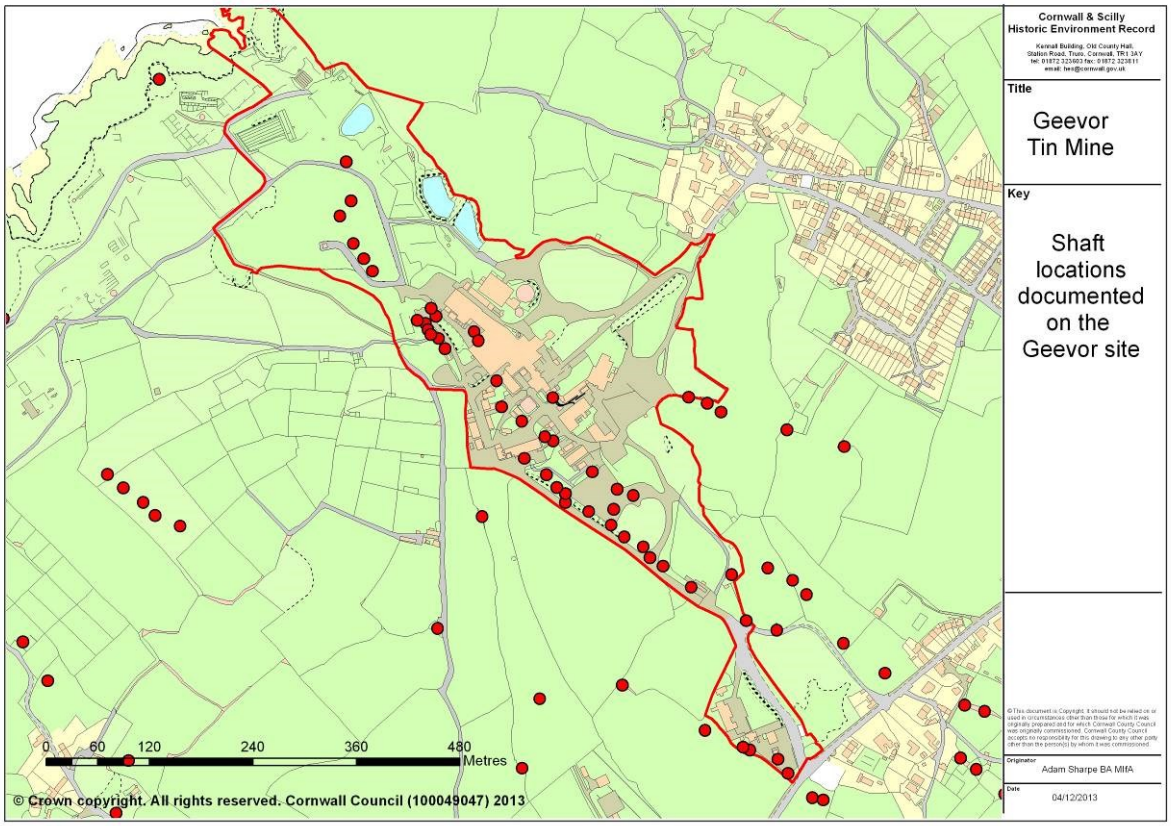


Fig 17. Documented shafts on the Geevor site.

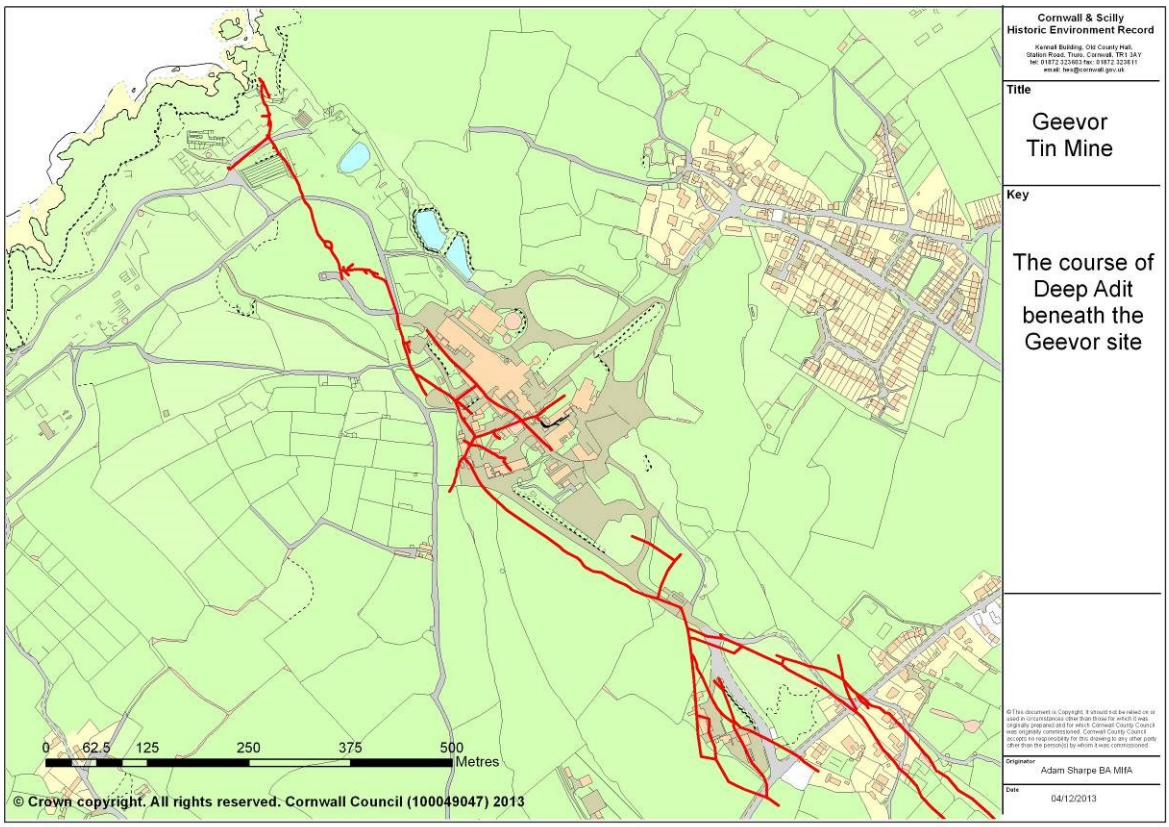


Fig 18. The course of the North Levant Deep Adit (3rd Level Adit).

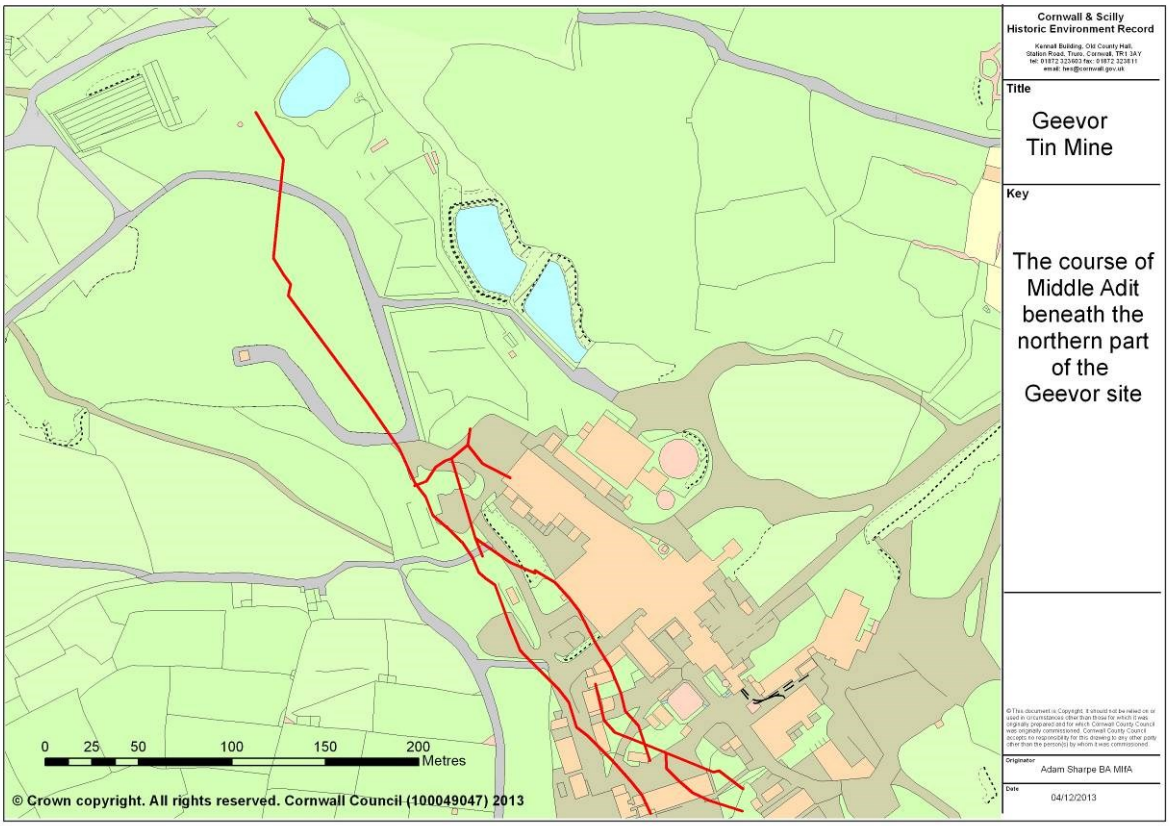


Fig 19. The course of the North Levant Middle Adit.

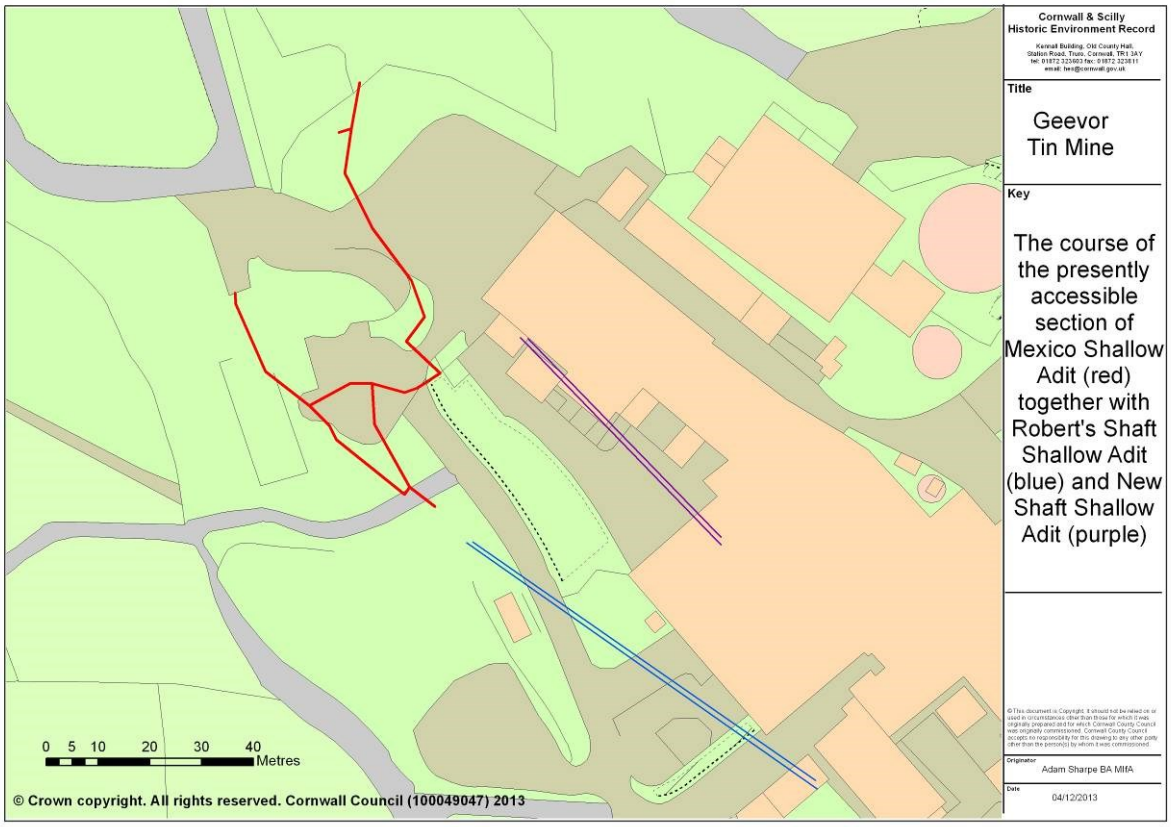


Fig 20. The courses of Mexico Shallow Adit, Roberts' Shaft adit and New Shaft Shallow Adit.

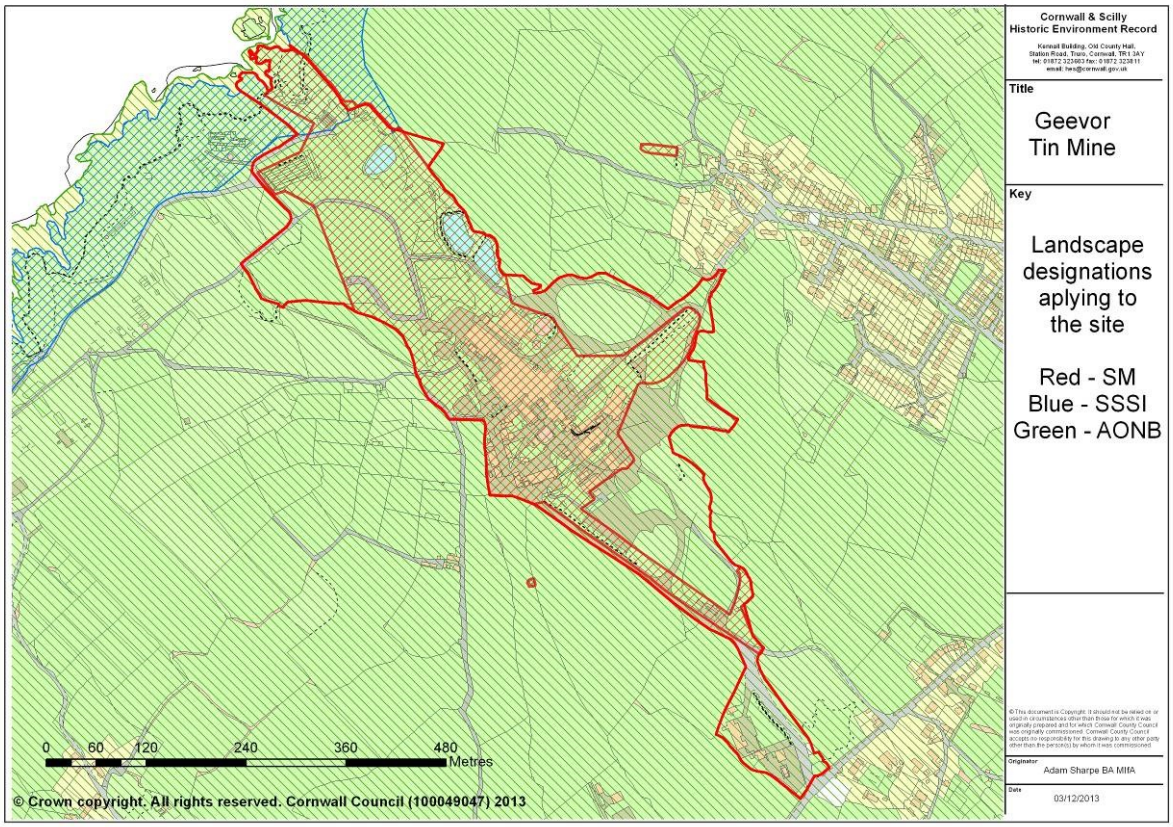


Fig 21. Landscape designations applying to the Geevor site.

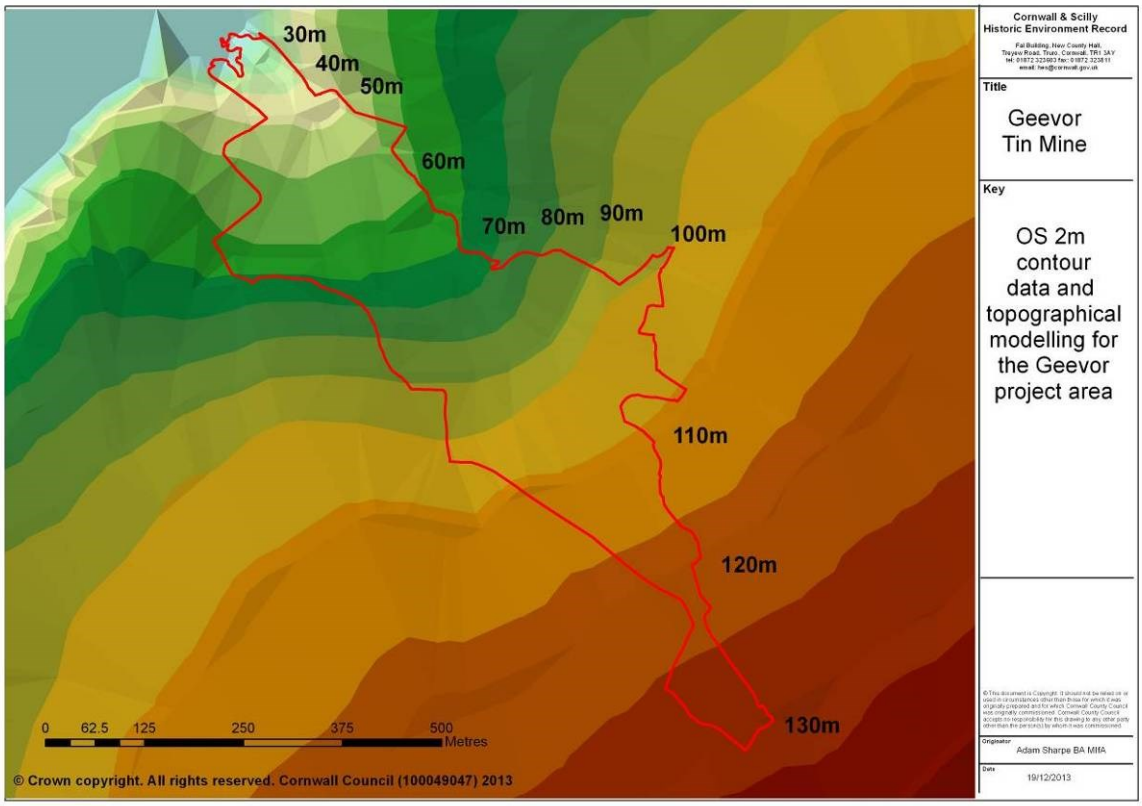


Fig 22. The topography of the Geevor site.

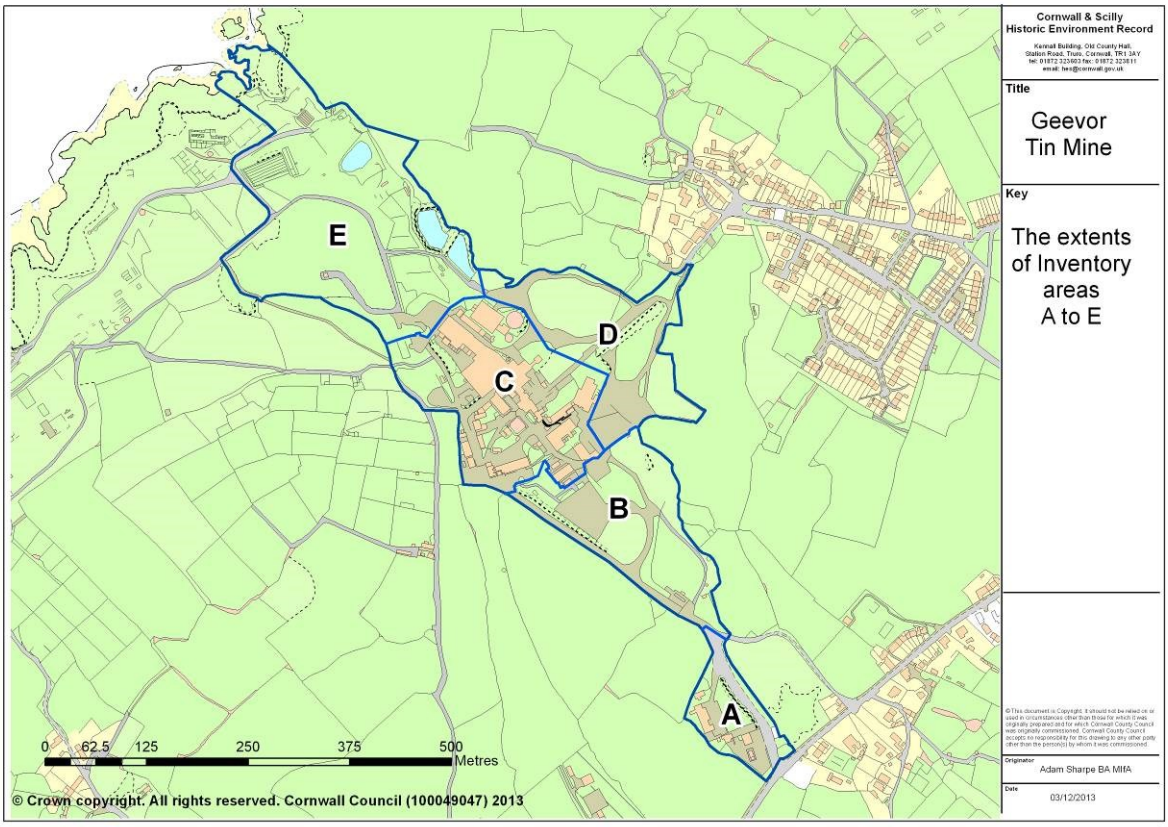


Fig 23. The five zones making up the Geevor site – see feature sheets for detail.

Fig 24. The Wethered Shaft headgear and winder house during the early days of the 20th Century showing the original small ore bin in the first headframe.

Fig 25. The Wethered Shaft complex circa 1930 showing the replacement headframe, new ore bin and the pylons supporting the overhead ropeway to the mill.

Fig 26. The Wethered Shaft site today, showing the rebuilt headframe and conserved winder house and power house.

Fig 27. The original dry, latterly the Geevor social club, with the former stables/candle store/cottage in the background.

Fig 28. The lower end of the overhead ropeway, with the original Victory winder and compressor house to the left, circa 1930.

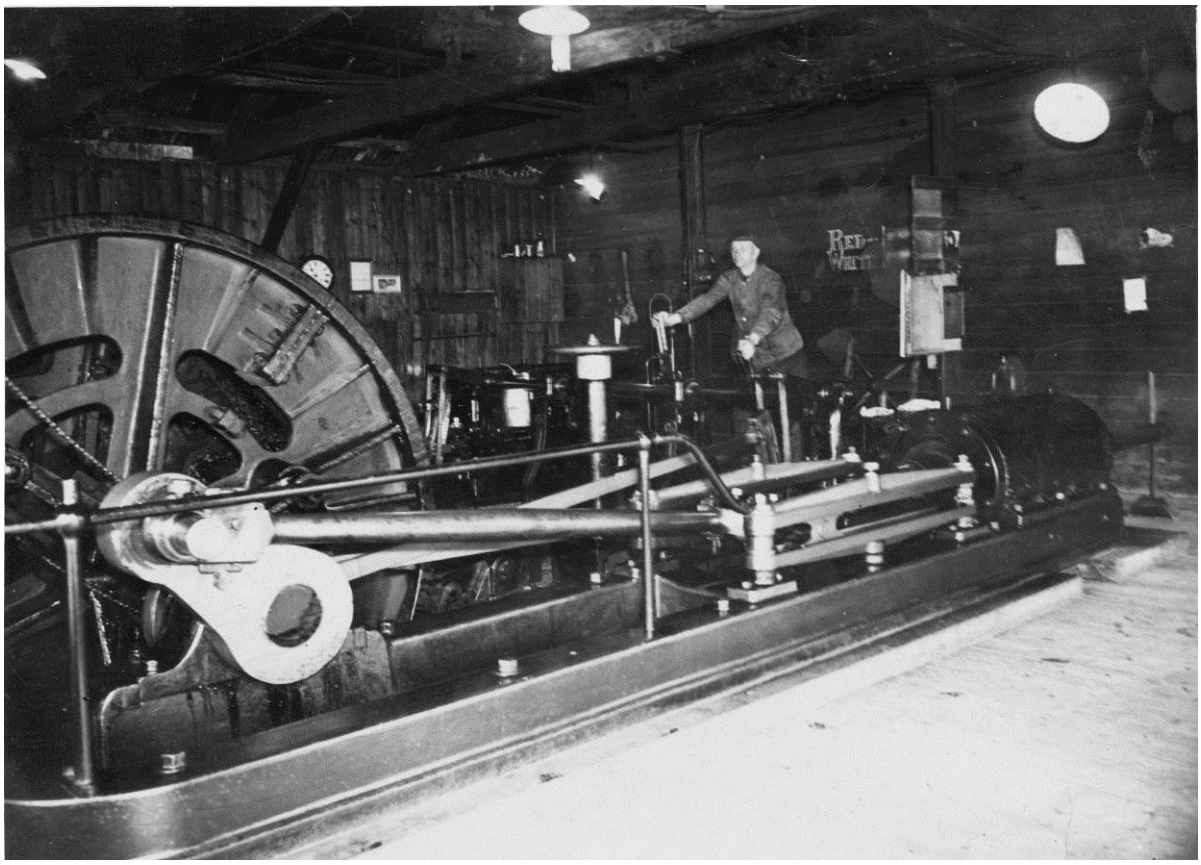


Fig 29. The original Victory Shaft steam winder, later converted to a capstan for maintaining the Victory Shaft furnishings.

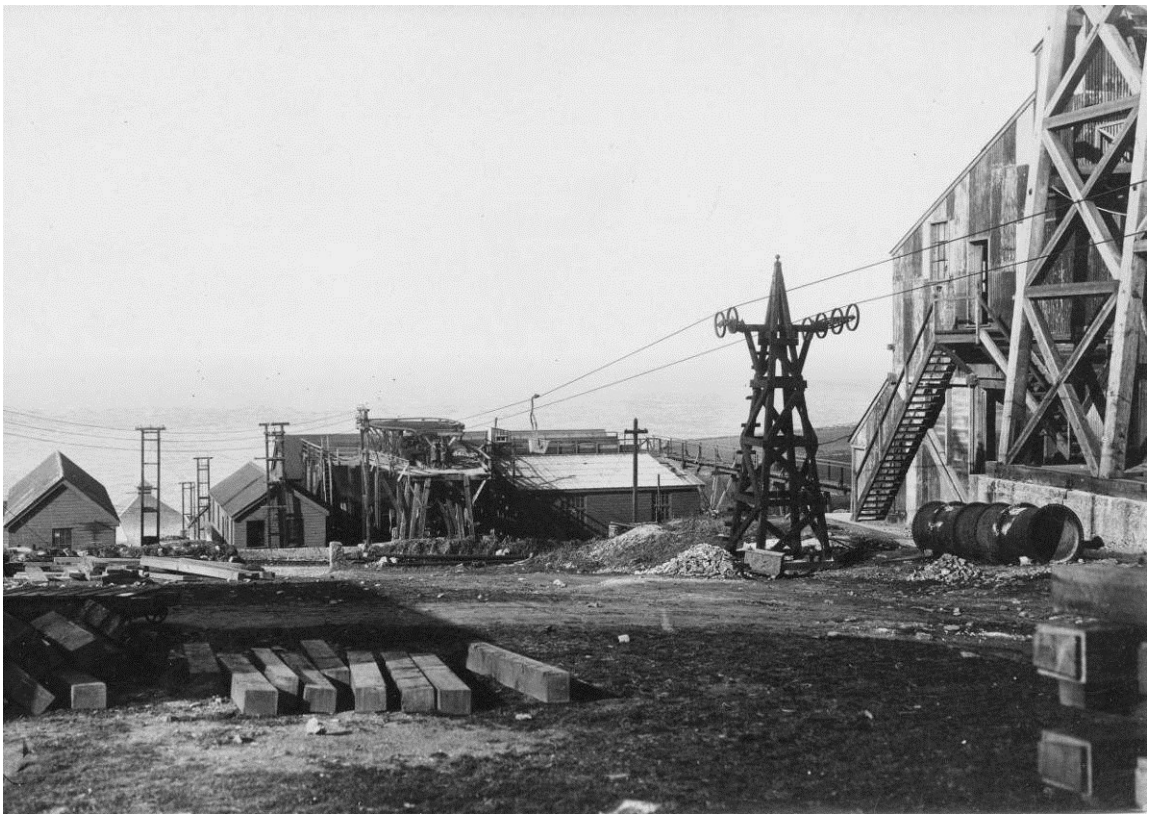


Fig 30. The area to the north of Victory Shaft (right) running down to the mill circa 1930 showing, from left to right, the fitting shop, dynamo house and ore bins/stamps engine house. The western calciner is just visible in the background between the two left hand buildings.

Fig 31. The same area today, showing the mid-1950s headframe, the 1930s Stokes rebuild ore bins and the cone crusher and HMS plant building.

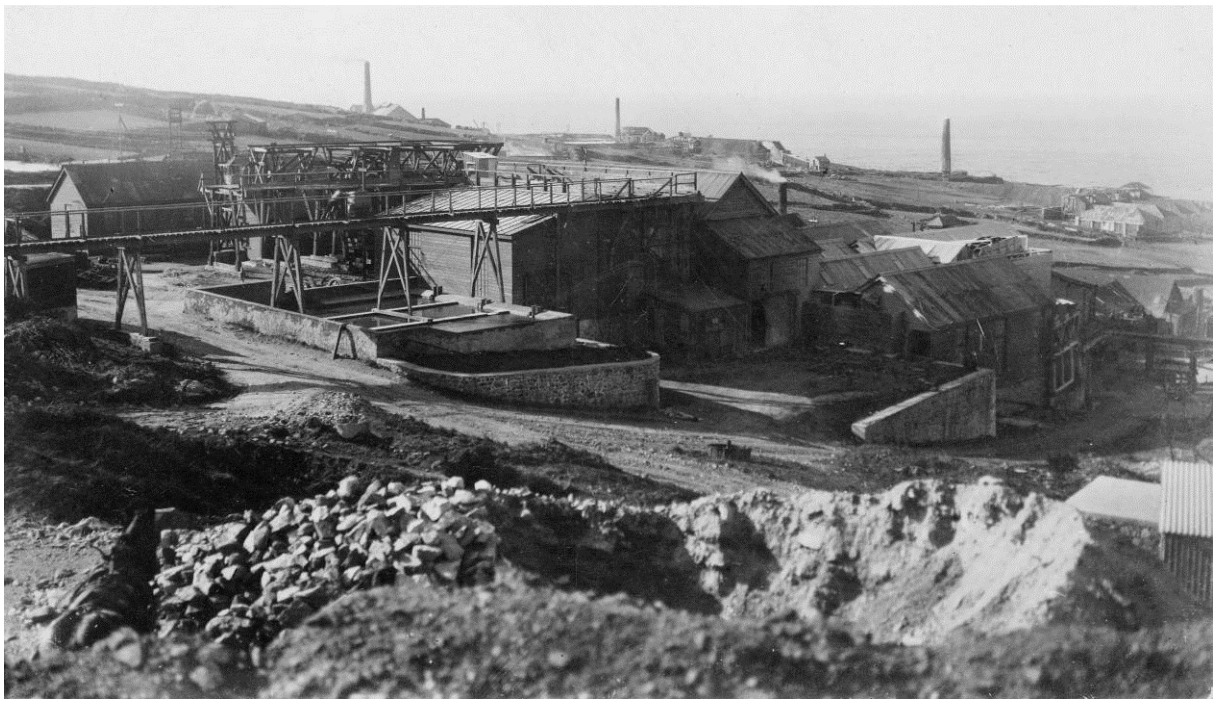


Fig 32. The mill circa 1930, just before the closure of Levant (background). Some of these buildings survive, and the downslope wall of the reservoir visible centre left now forms the back wall to the southern part of the HMS plant at its eastern end.

Fig 33. The eastern side of the mill today. Much has changed, though some of the timber-clad buildings of the core of the mill were constructed during the 1930s.

Fig 34. The Rescorla's works in its developed second phase form, probably during the 1950s.

Fig 35. All that now remains of the Rescorla's works.

Fig 36. One of the set of tailings settling tanks, part of the former Rescorla's works.

Fig 37. Walling and features at Trewellard Zawn, including the water stamps (right). Sections of the upper wall have recently collapsed.

Fig 38. The office and reception building. The start of the visitor experience.

Fig 39. The reception area in the entrance building.

Fig 40. Victory headframe – the focal point of the site.

Fig 41. The Victory Shaft surface station – the principal connection point between surface and underground on the mine.

Fig 42. The Hard Rock Museum, the principal orientation point for visitors to the site.

Fig 43. The atrium area of the Hard Rock Museum.

Fig 44. The interior of the miners' dry – a truly evocative space, now partially restored to its former appearance.

Fig 45. The entrance to the mill tour.

Fig 46. The visitor's first impression of the interior of the mill – the picking belt. The interpretation is unobtrusive but informative.

Fig 47. One of the many shaking tables, restored to motion and used by the guides for demonstrations of tin concentration.

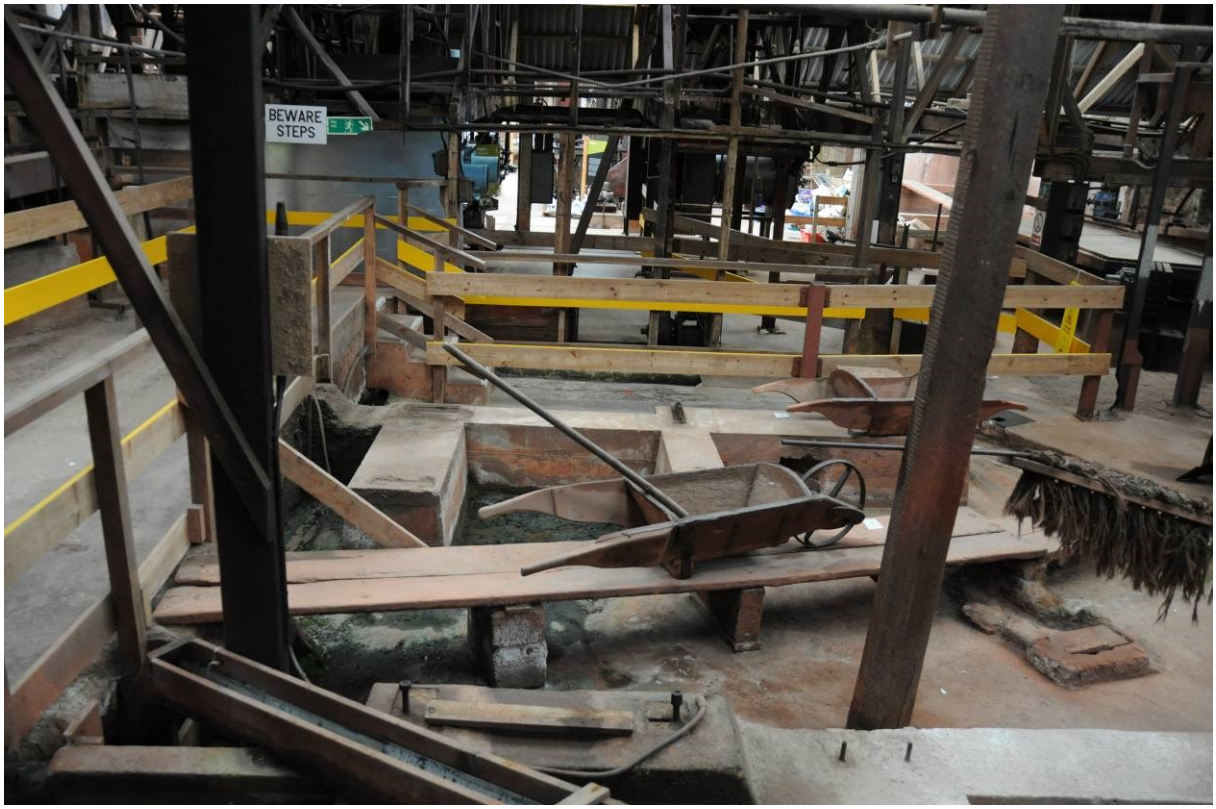
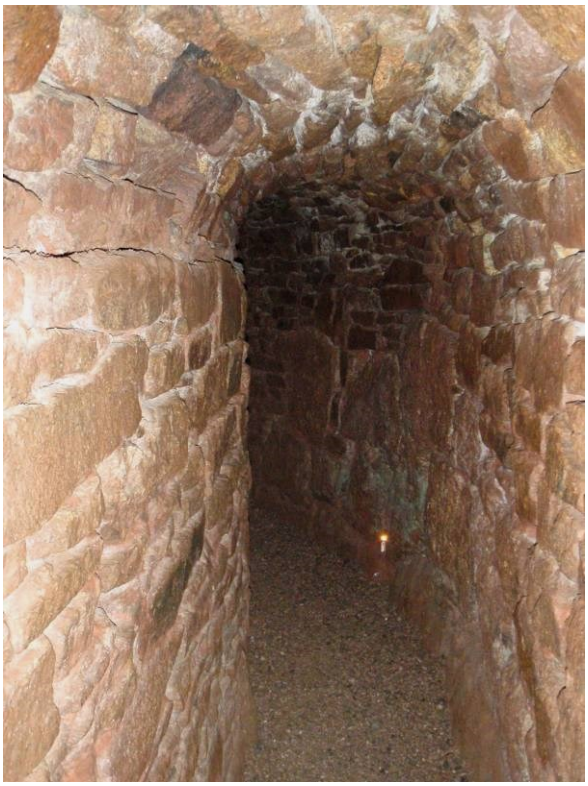
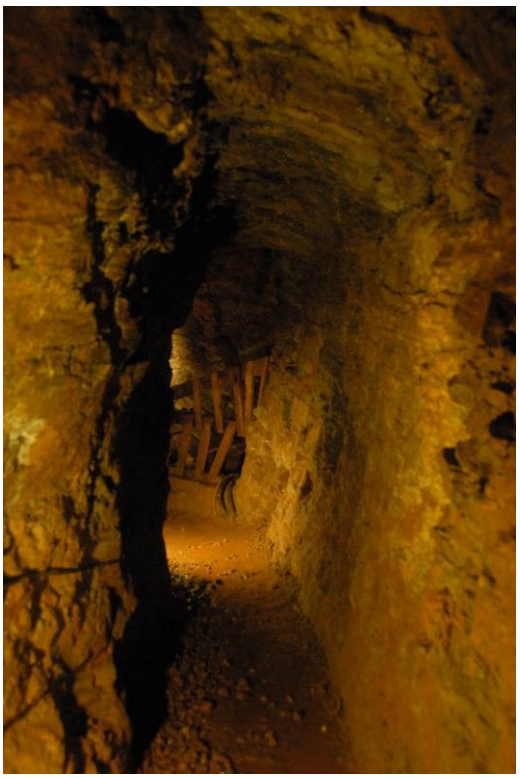


Fig 48. The old tin floors, utilised for a display of early mining equipment. The yellow line denotes the visitor route.

Fig 49. The tin floors. Visitors can try their hand at tin panning or watch a video here, especially at times when the underground tour is at capacity.

Fig 50. The reconstructed entrance to the Mexico Shallow Adit underground tour.





Figs 51 and 52. Scenes underground in the original section of the Mexico Shaft Shallow Adit visitor tour. The roof heights are notably low in many areas.

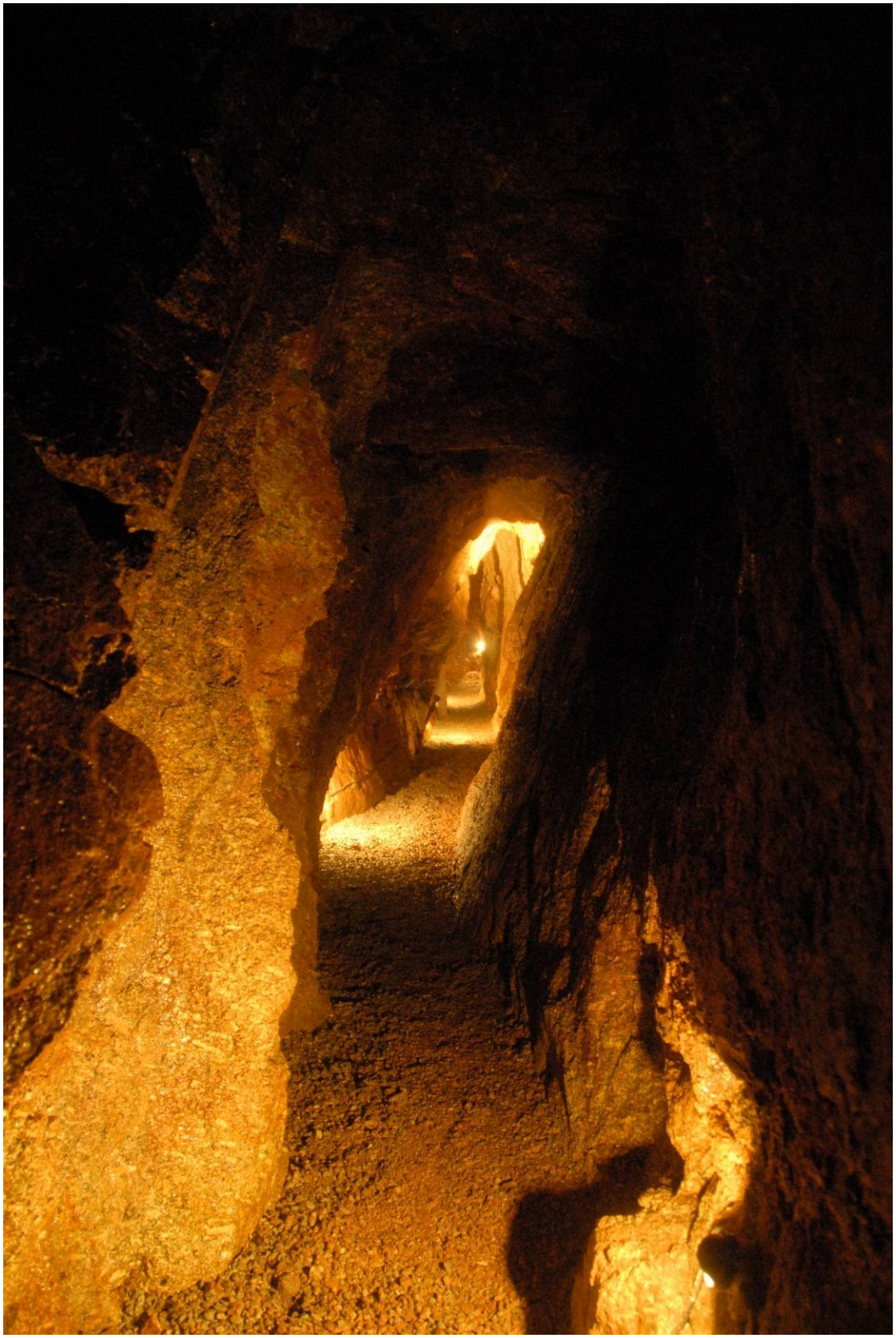


Fig 53. A view in the newly extended section of the underground visitor tour. Low level lighting and gravelled surfaces make the adit accessible for almost all visitors.

Fig 54. The interior of the mine shop

Fig 55. The interior of the mine café, whose walls are used to display a mixture of local artwork and historic photographs.

Fig 56. The restored western calciner, an opportunity for extension of the visitor experience at Geevor.

Fig 57. The interior of the New Table Section, a large and currently unused space with considerable potential for adaptive re-use.

Fig 58. The old stables/stores and the carpenters' shop – two restored but currently under-used buildings in the core area of the site.

Fig 59. The eastern calciner and slimes plant. Although conserved, they are currently not on the visitor tour, though might be of interest to specialist groups.

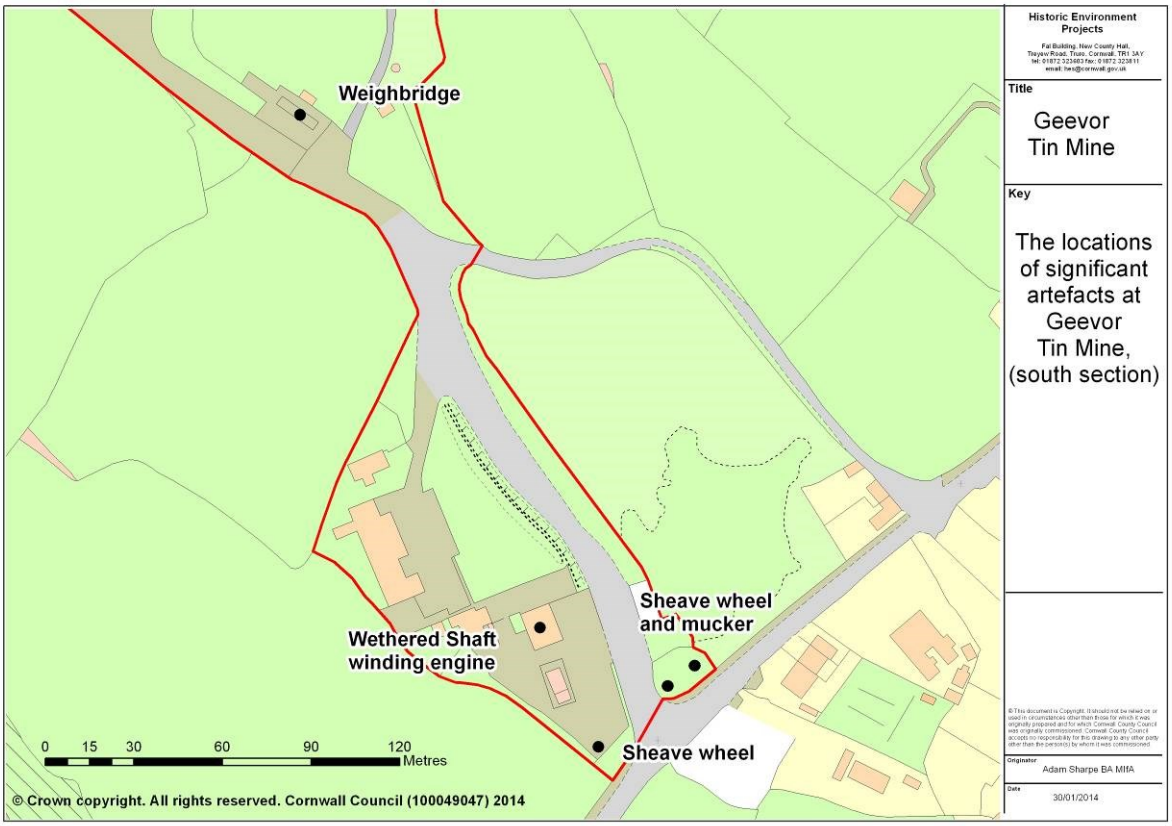


Fig 60. The locations of significant artefacts in the Wethered Shaft complex.

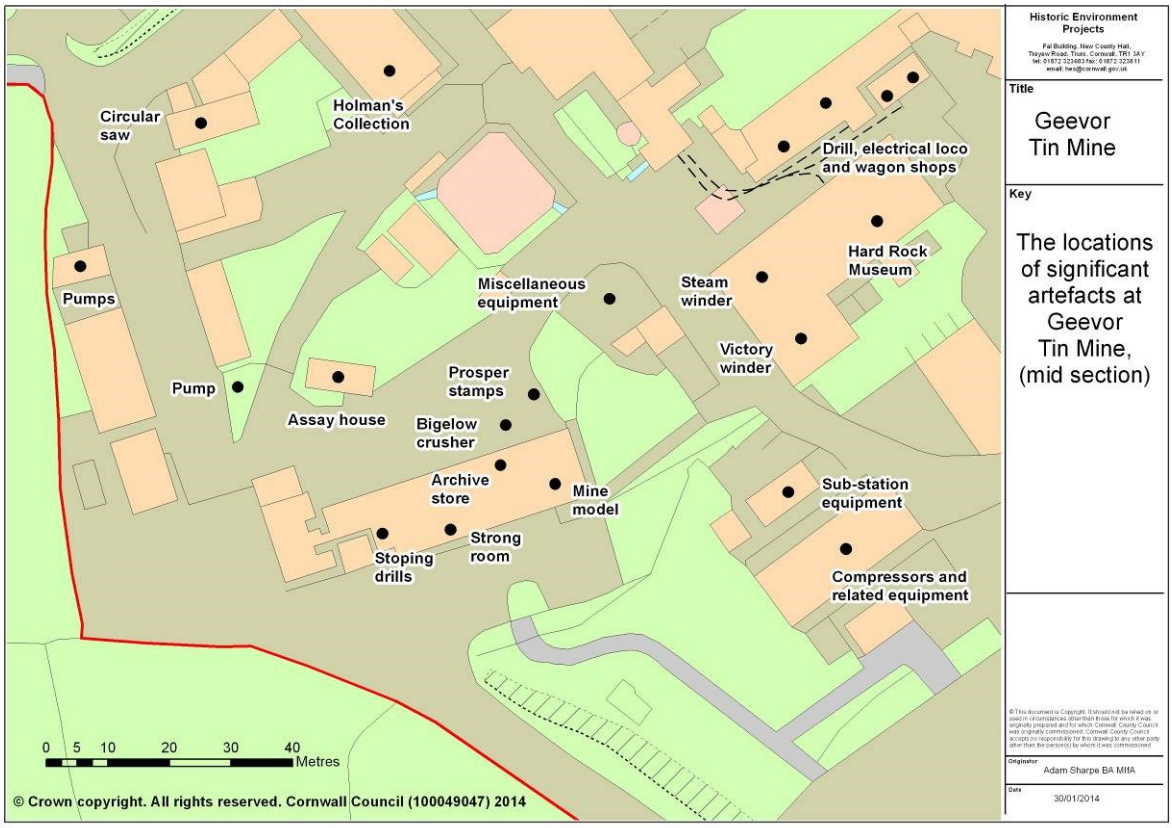


Fig 61. The locations of significant artefacts in the core area of the site.

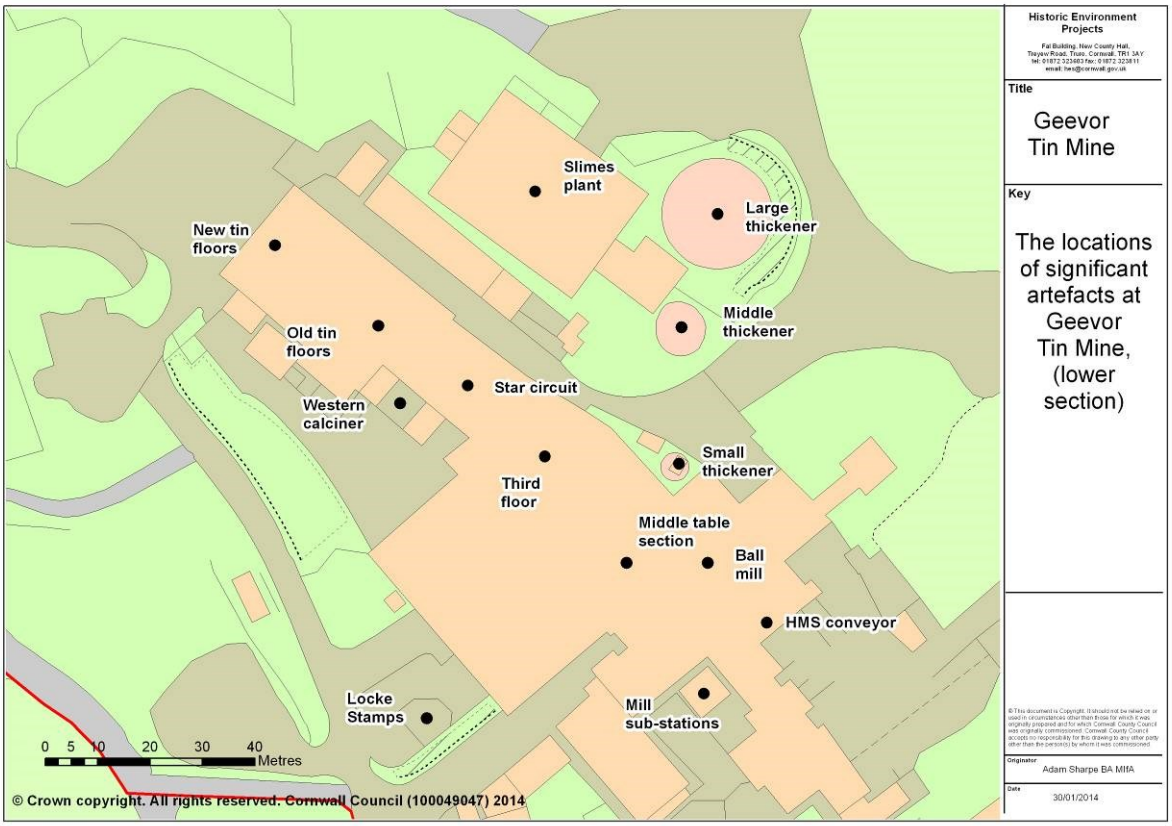


Fig 62. The locations of significant artefacts in and adjacent to the mill and slimes plant.

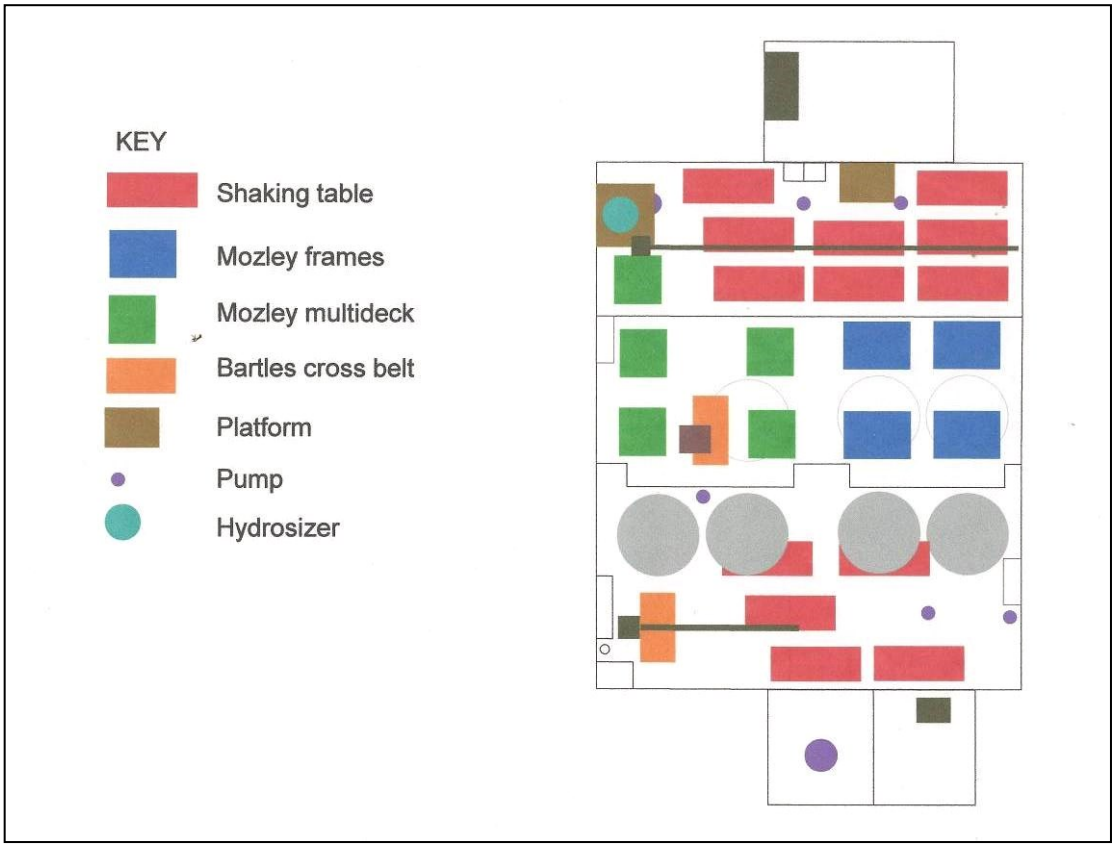


Fig 63. A schematic plan of the Slimes Plant, showing the locations of its equipment. The grey circles represent the concrete round frames.

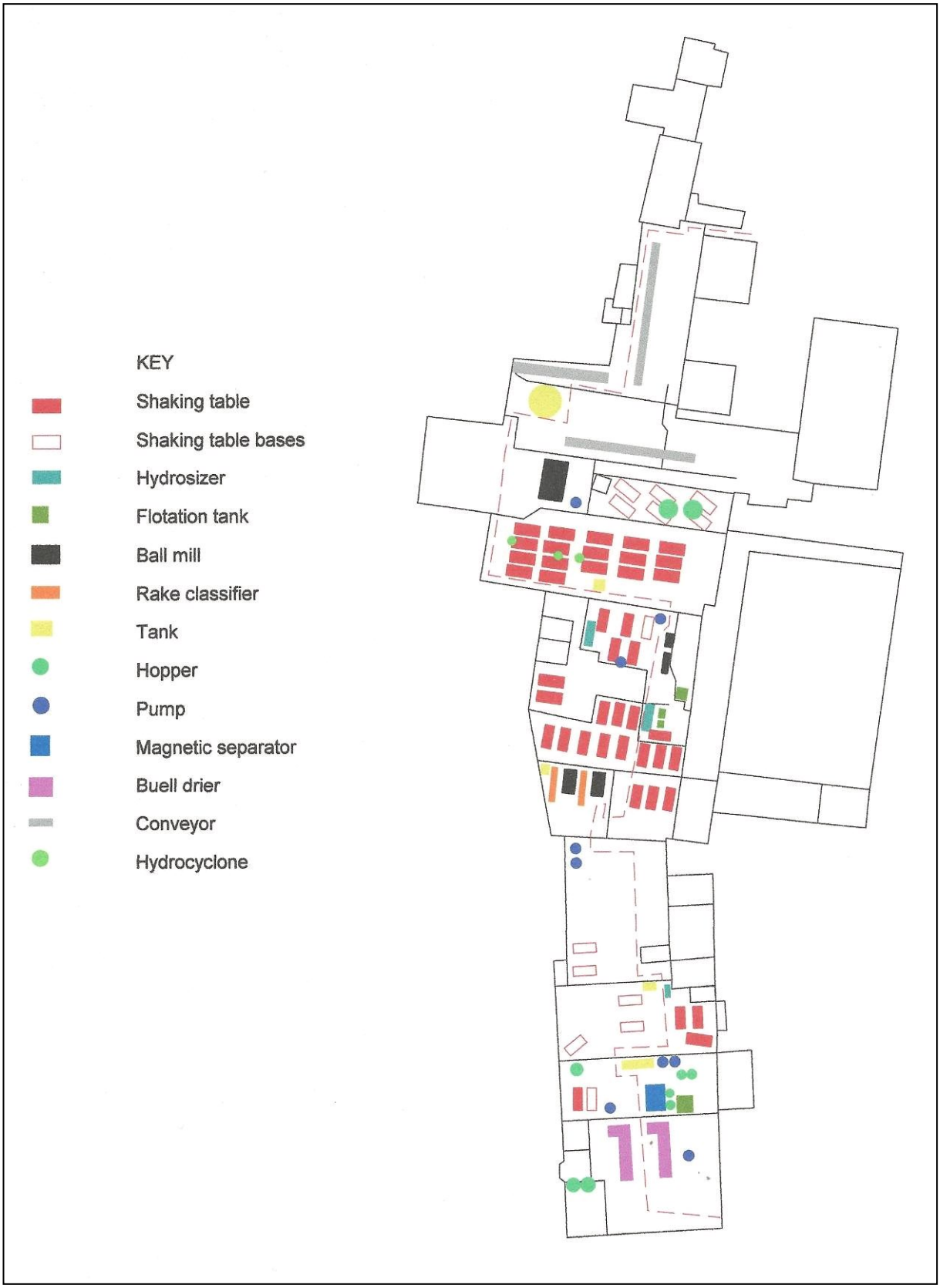


Fig 64. A schematic plan of the mill complex, showing the locations of significant items of machinery. The dashed line indicates the visitor route through the mill.

Fig 65. The original Wethered Shaft electric winding engine.

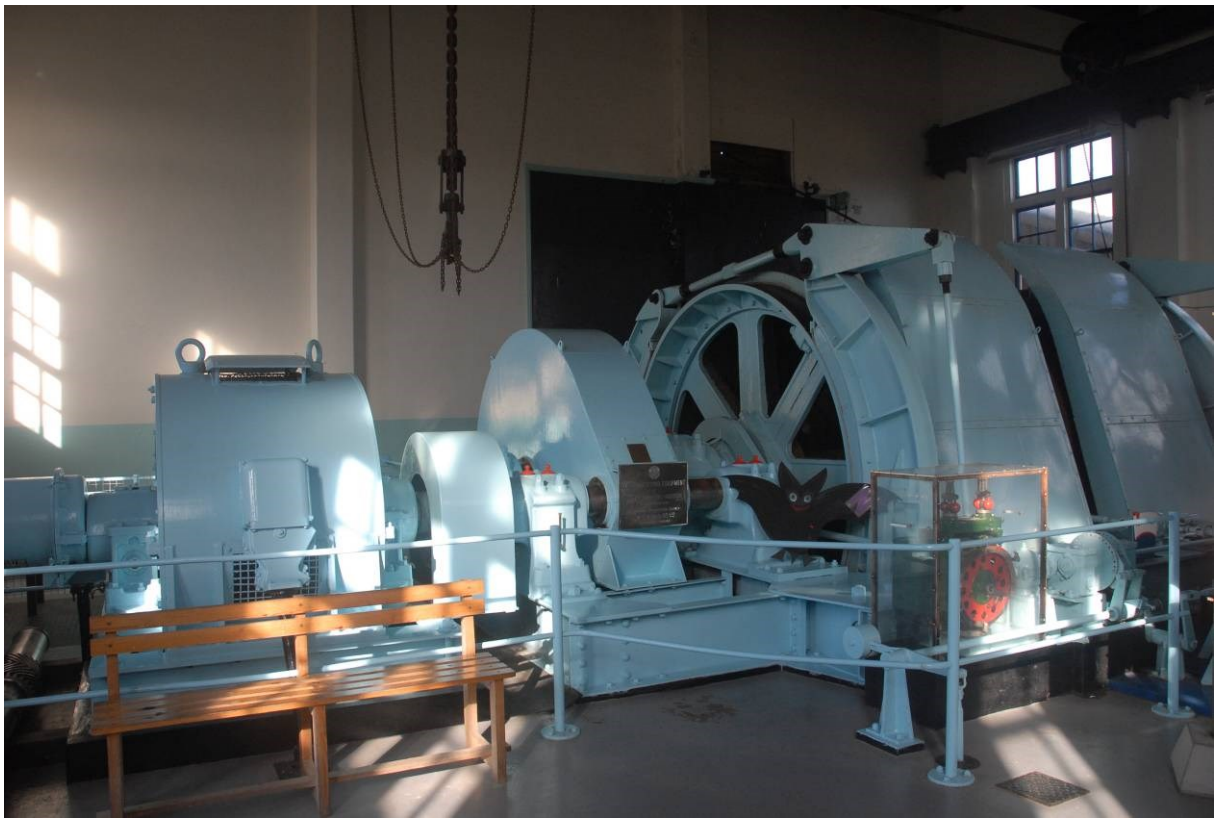


Fig 66. Victory Shaft winder engine.

Fig 67. The original Victory Shaft steam winding engine. This is on the visitor tour and has the potential to be restored to motion.

Fig 68. Two of the three early air compressors at Geevor. The far end of the building is used to demonstrate the uses of compressed air on the mine, and includes a recorded commentary.

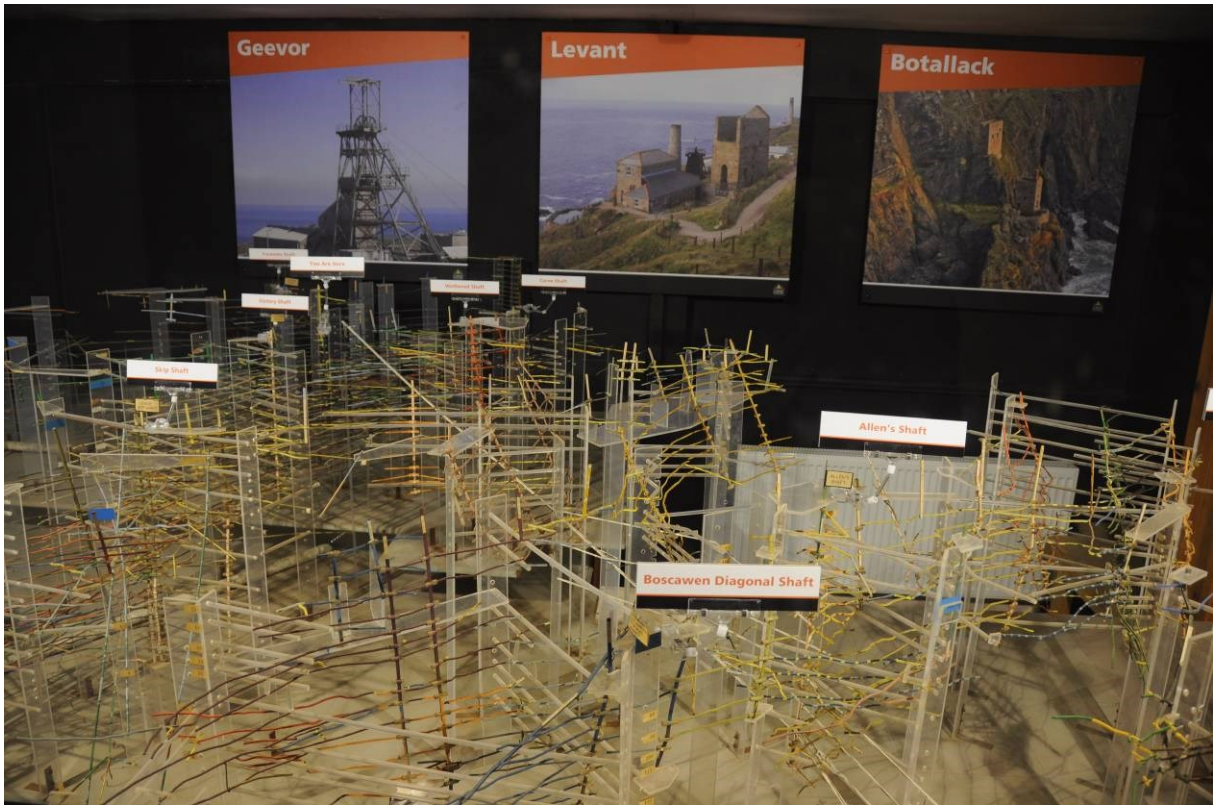


Fig 69. The now-unique mine model – a complex construction in need of conservation attention.

Fig 70. The interior of the mine rescue room – an example of one of the displays of mine artefacts displayed in the building relevant to them.

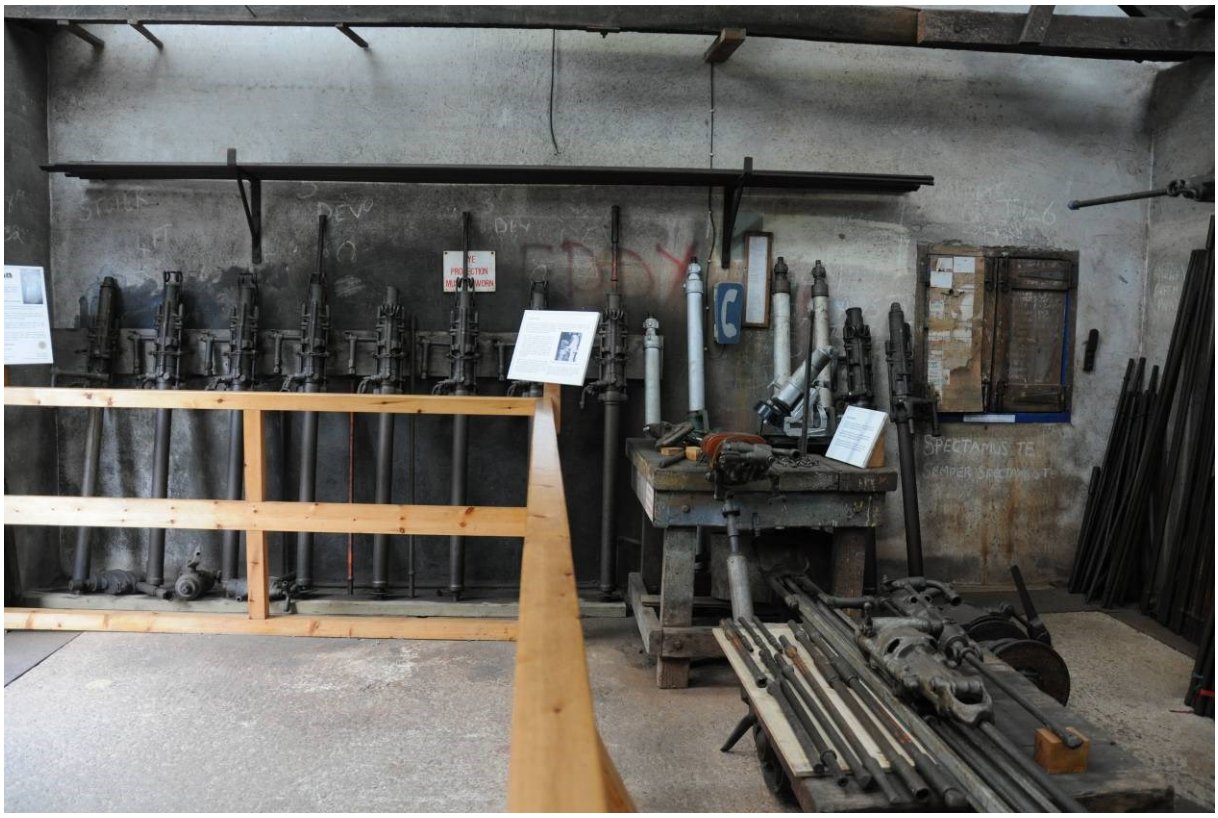


Fig 71. The interior of the drill shop, the display including not only compressed air drills but also maintenance equipment.

Fig 72. The loco workshop, showing battery locomotives in course of restoration.

Fig 73. The minerals gallery in the Hard Rock Museum, including interactives and a video display.

Fig 74. Cases in the Hard Rock Museum display a wide range of mine and related artefacts, including weapons and other items made from tin and copper.

Fig 75. The managers' office in the miners' dry, showing the use of original artefacts, archive material and ephemera to recreate its original appearance.

Fig 76. The Holman's Collection display in the Mill Fitting Shop, including a re-creation of part of a typical small local foundry.

Fig 77. The Hardinge ball mill, one of a number of rare and important original items of machinery on the Geevor site.

Fig 78. The upper part of the middle table section showing the complex timberwork and pipework, as well as a few of the many shaking tables surviving at Geevor.

Fig 79. The regrind ball mills and rake classifiers, the latter in need of conservation attention.

Fig 80. A rare three pocket Janney classifier (centre left) on the old tin floors.

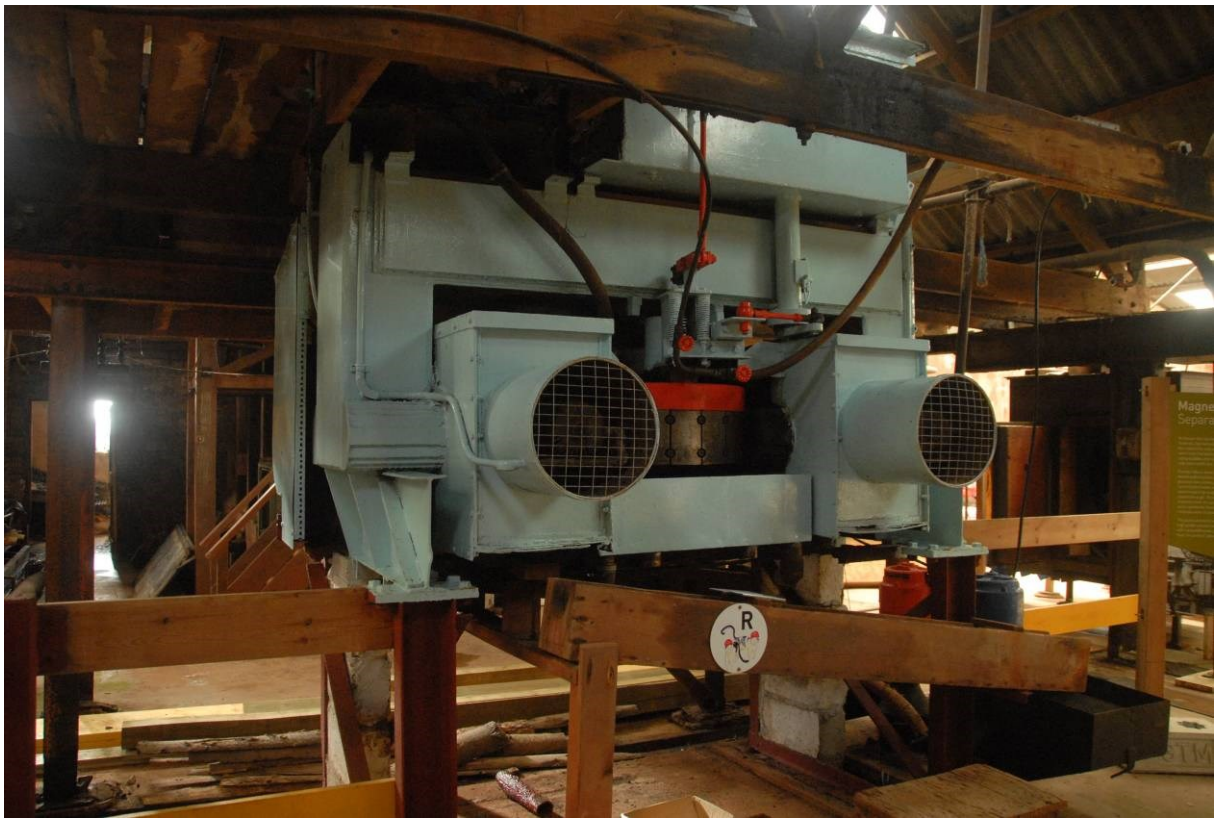


Fig 81. The rare Jones magnetic separator, an important piece of machinery in the evolution of dressing techniques at Geevor.

Fig 82. One of the Buell tin concentrate driers on the tin floors, used in the final stage of preparation of the tin concentrate.

Fig 83. An early flotation cell on the old tin floors, one of two at Geevor, and probably one of those brought to the site from Tresavean.

Fig 84. The large thickener, one of three to survive at Geevor. The steelwork of these features is at risk from corrosion and loss.

Fig 85. One of the two Bartle's cross belt concentrators in the Slimes Plant.

Fig 86. Three of the now-unique concrete round frames in the Slimes Plant.

Fig 87. An original prototype Mozley multi-deck frame in the Slimes Plant. This form of slimes concentration equipment was developed at Geevor.

Fig 88. A production Mozley multi-deck frame in the Slimes Plant.

Fig 89. A collapsing lintel above the entrance to the Compressor House, temporarily propped though clearly in need of attention.

Fig 90. Severe degradation to the base of a steel support carrying a large concentrate hopper adjacent to the visitor route through the tin floors. Other steel roof supports nearby have corroded very badly, and Acrow props have had to be installed for visitor safety.

Fig 91. Advanced corrosion of the reinforcing within one of the mass concrete legs of the 1930s ore bins adjacent to the site of the former primary crusher. Whilst most of these issues were addressed in 2001 and 2007/8, some areas still require attention.

Fig 92 Severe degradation of one of the window frames in the Victory winder house. The frame has rotted and the junction with the upright has failed completely.

Fig 93. Poor standards of preparation and paintwork in 2007 have led to the rotting of this window frame on the Sample House. Much of the paintwork on the site requires attention as a matter of some urgency.

Fig 94. Despite corrective treatment in 2001, these steel Crittall windows in the compressor house again show signs of developing corrosion.

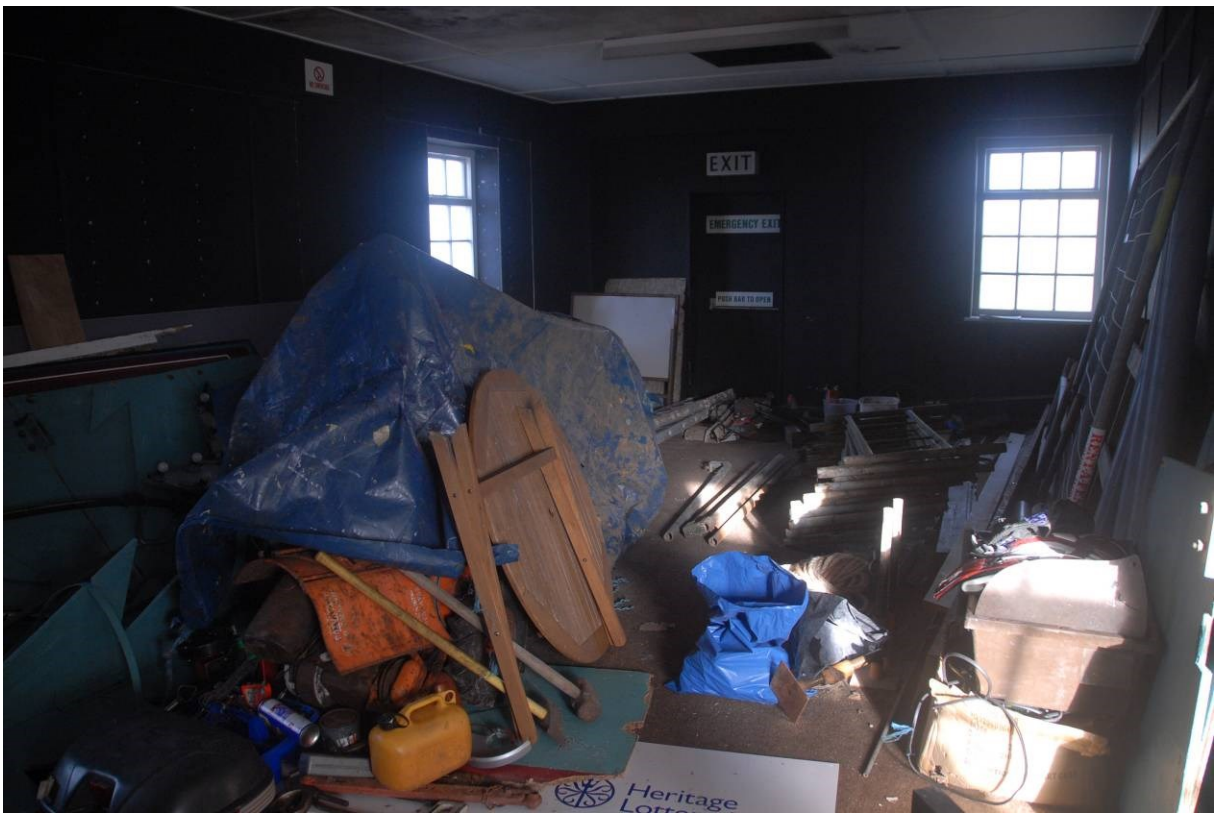


Fig 95. A number of buildings are currently used for the storage of materials or rubbish, as here in the Wethered winder house.

Fig 96. Water damage to the linoleum decks of these shaking tables in the middle table section is clearly evident. In places, the underlying wooden structures have begun to rot.

Fig 97. Despite having been replaced in 2007, this roof sheet over the third floor area has cracked, resulting in a significant water leak onto the equipment below. A few roof sheets elsewhere on the site also need replacement.

Fig 98. This steel launder adjacent to one of the hydrosizers shows clear evidence of advanced corrosion, an example of an original item which will be lost unless conserved soon.

Fig 99. The original primary crusher, relocated as the extraneous ore crusher in the 1980s now sits, neglected, outside the reception building.

Fig 100. As well as potholes and tarmac patches, the site entrance road had acquired yet another subsiding mine shaft.

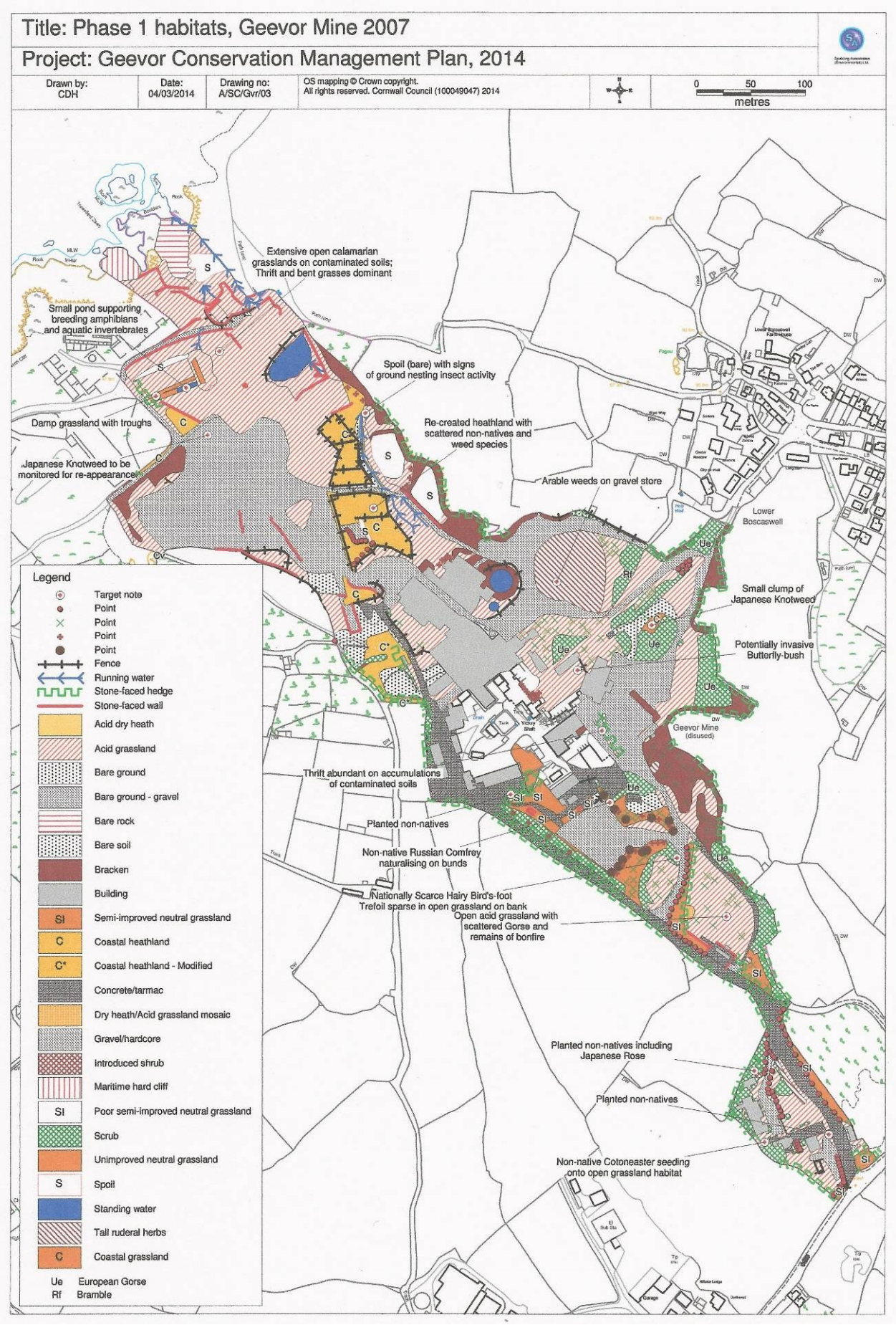


Fig 101. Habitat mapping for the Geevor CMP project area.

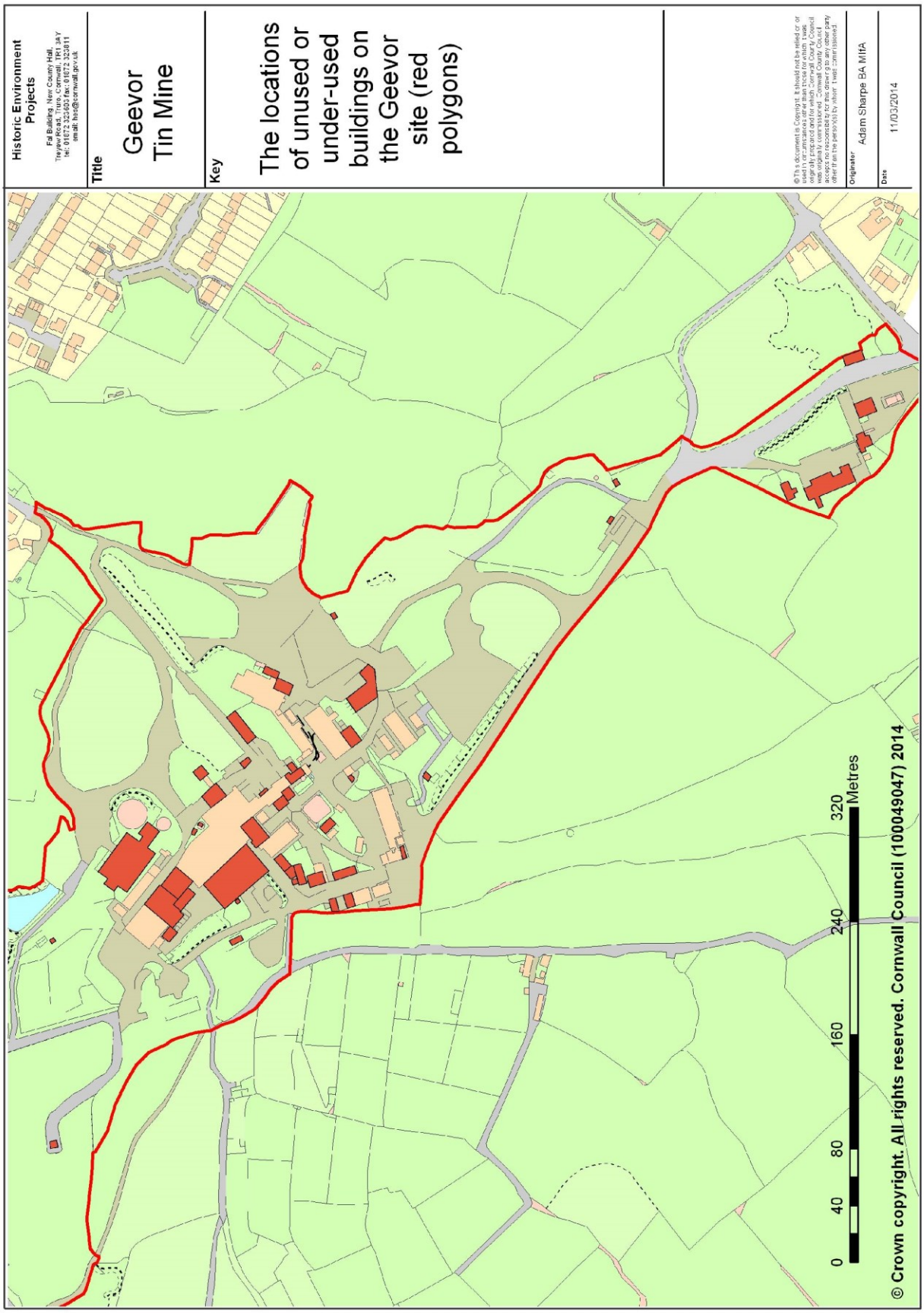


Fig 102. The locations of unused or under-used buildings on the Geevor site.