Chichester and District Archaeology Society

Survey and Photographic Record

Houghton Woods WW2 Auxiliary Unit Hideout June 2019

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1. Summary

This report is a sub-section of an overall report "Surveying and recording of World War Two Auxiliary Hideouts by Chichester & District Archaeology Society" and should be read in conjunction with that report.

Although access was limited to a single visit due to the presence of bats, a topographical survey and a restricted internal survey were completed. A photographic record was produced and a drawn record made, enabling a condition assessment to be carried out. Suggestions were made regarding the mitigation of developing risks associated with the site.

2. Background and General Description of Site

CDAS were approached by the land owner, Forestry England and the SDNPA to make a survey and record of the hideout as its condition was deteriorating. James Kenny, Archaeologist for Chichester & District Council had recommended CDAS for this task following work undertaken on similar sites in Kingley Vale and Stansted.

The hideout is located in woodland roughly 1.5km NW of the Whiteways Roundabout on the A29. It is of the "buried Nissen hut" design and lies on the side of a hill with its axis running across the slope. The map reference for the main entrance is SU 99299 12181 and the end of the escape tunnel is SU 99288 12203 (from GPS readings).The terrain is quite disturbed as shown in the LiDAR (ref 1) map which has had 0.2m contour lines superimposed (Fig 1).

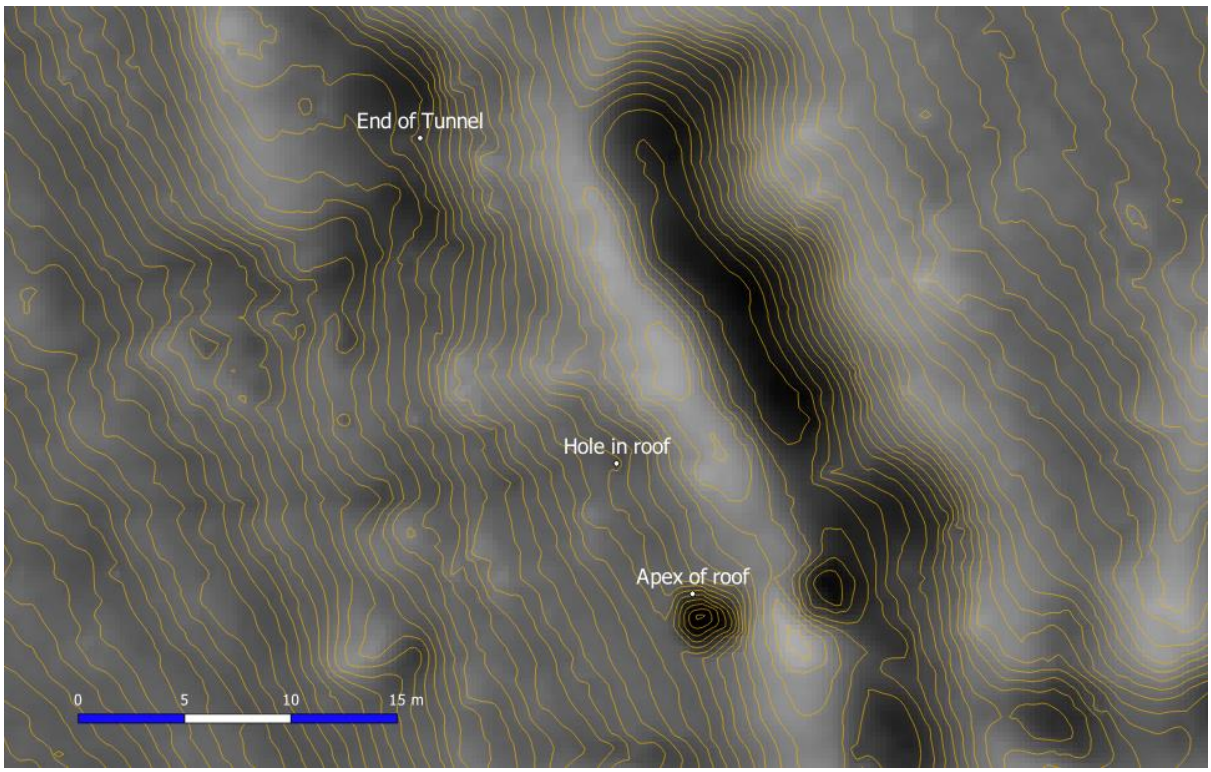

Fig 1 – LiDAR map of immediate area (LRM model)

The overall length of the buried structure including a 15m long escape tunnel is around 24 metres. Photographs of the entrance Fig 2 and the end of escape tunnel Fig 3 are shown below. The main entrance is fenced off partly as a safety measure and partly to protect bats which have on occasion been found on the site. Getting into the hideout involves scrambling down the slope taking care not to slip or collide with the corrugated iron roof. The escape tunnel, which is a 15m long concrete pipe, runs in-line with the axis of the hideout. At its far end the tunnel is mostly buried and is extremely difficult to find under the brambles and other vegetation.

A view of the interior of the hideout looking from the entrance towards the back wall is shown in Fig 4.

The hideout does not offer any views across the local landscape as it is in dense woodland. Oral history (ref 2) reports that there was a lookout to the south which has not been found.

Fig 2 Main entrance to the hideout. The leading edge of the corrugated iron roof is visible as are two cast iron ventilation pipes to the left and right of the opening

Fig 3 the far end of the Escape Tunnel

Fig 4 View looking from entrance towards back wall. There would have been a door in the partition but this has been lost

3. Site Access/ Health and Safety

As is clear from the previous section, this site has significant risks and hazards. A comprehensive Risk Assessment (Appendix 1) was made following a preliminary visit in December 2018.

Bats have been found on the site in the past and this was confirmed in a comprehensive survey made in 2014 (ref 3). In order to ensure that the survey could be conducted without risk to any bats on site CDAS engaged the support of the Sussex Bat Group. Following a visit in January 2019 together with Sue Harris from the Sussex Bat Group a survey plan was prepared. Key elements were that the survey should be conducted between April and November when the risk of finding bats was least and that the number of people in the site should be kept to a minimum. Finally non-invasive measuring and recording techniques should be used where possible.

4. Method

The work was split into three parts:-

1. A topographical survey of the site recording external and internal dimensions. From this work, plan and section drawings have been prepared. The drawings include indications of how the hideout might have looked when it was constructed.
2. A comprehensive photographic record of the interior of the site and a more limited record of the exterior which is mostly under dense vegetation. These add further detail to the plan and section drawings and also support the condition assessment.
3. Condition assessment. The site is deteriorating and will eventually collapse so it was important to note and record areas at most risk.

a. Topographical Survey

Before proceeding with the survey the site was scanned with an ultrasound bat detector. No bats were detected and none were seen during the course of the work.

Internal dimensions were taken with tapes where possible and a non - contact distance measure (Neilsen KC-200 Bidirectional type)-when not.

For the E-W section the external dimensions were measured using tapes and heights were measured using a “Surveyor’s Level”. There was no convenient local map/OS datum so all height measurements were taken relative to a local datum. Based on ease of finding again and reproducibility, the apex of the corrugated iron roof at the main entrance was chosen.

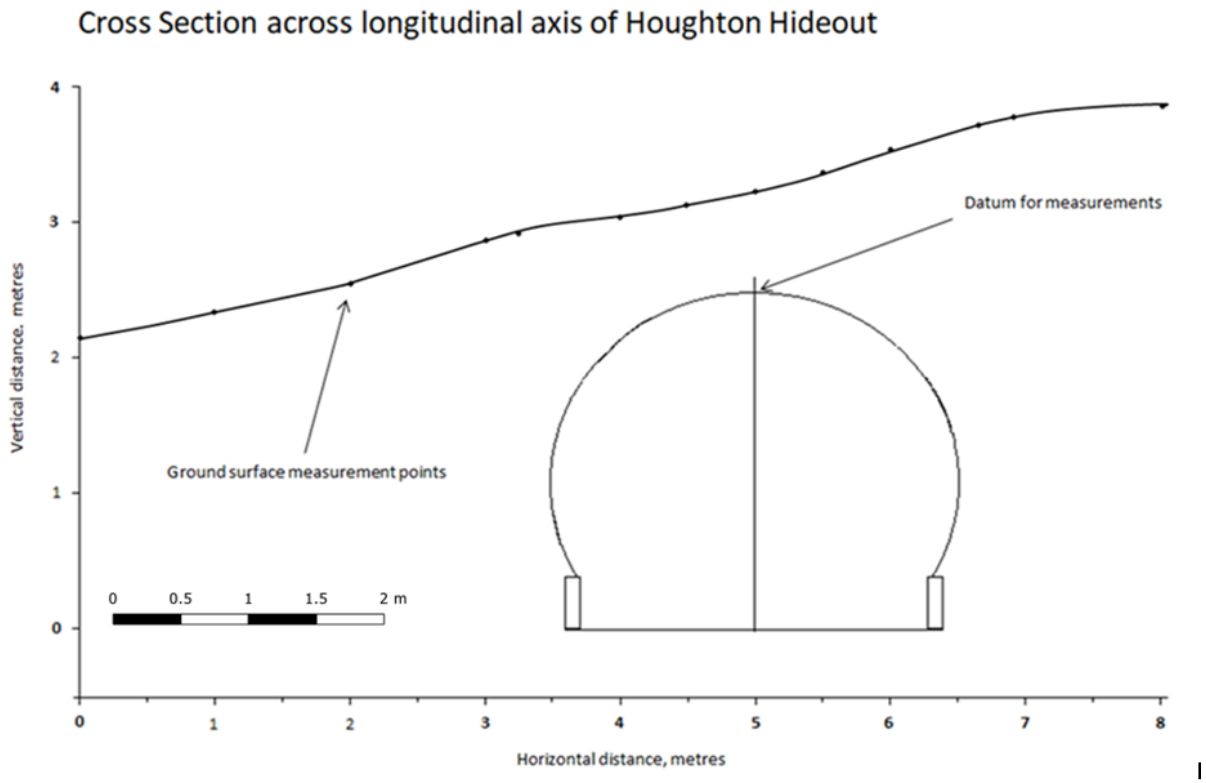

Fig 5 Cross Section across longitudinal axis from topographical measurements.

Due to the density of the overlying vegetation few topographic measurements for the lengthwise or N-S section were able to be made using conventional methods. Those that were made were complimented with data taken from the Secrets of the High Woods LiDAR Survey conducted by the South Downs National Park Authority see Fig 6.

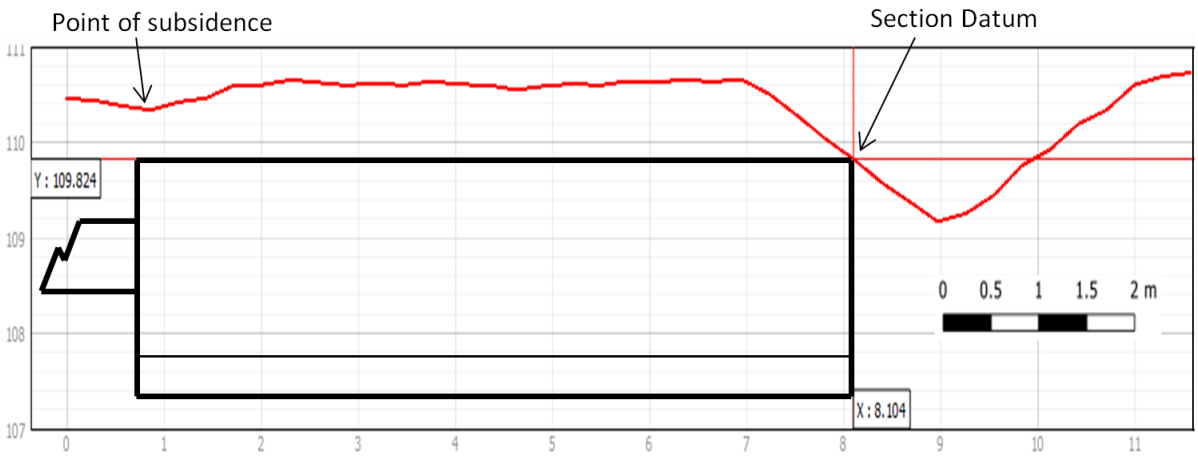

Fig 6. Indicative Cross section along the longitudinal axis of the hideout and part of the escape tunnel.

Due to Health and Safety concerns it was decided not to take detailed measurements of the collapse of the rear wall of the hideout nor of the earth spill at the main entrance. Photographs were deemed sufficient.

b. Photographic Record

A total of over 60 photos were taken on the main survey in June 2019 and on earlier visits. These include general views of the interior and close-ups of particular features and details. It is not possible to include all the photos in this report. A full set can be obtained by applying to CDAS.

5. Volunteer Participation

Four CDAS Members completed the work on 28th June 2019. Including preliminary visits in December 2018 and January 2019 6 man days of effort were involved.

We were supported on all site visits by Andrew Norris of Forestry England and Simon Moxford of South Downs National Park Authority.

Sue Harris of Sussex Bat Group supported us on the preliminary visit in January 2019

6. Survey Results, Observations and Discussion

Figs 7,8 & 9 show in order, a plan view, a profile along the axis of the hideout and a cross section across the hideout 2.5 metres from the apex of the corrugated iron roof at the entrance. Fig 9 also shows detail of how the supporting walls are thought to be constructed. Fig 10 is an isometric view.

The drawings are designed to show how it probably looked when it was first built. The central structure is largely intact and it requires little speculation to draw the structure from the entrance to the back wall.

However, the original entrance to the hideout is missing. What remains is a spill of earth into the entrance and evidence of a cut into the chalk on the east side of the entrance extending a couple of metres beyond the roof of the hideout. Based on knowledge from other sites an entrance shaft has been added to the drawings with a trap door entry at the top. This would have probably been constructed with a timber frame and corrugated iron cladding. A ladder would have been needed to climb down into the hideout.

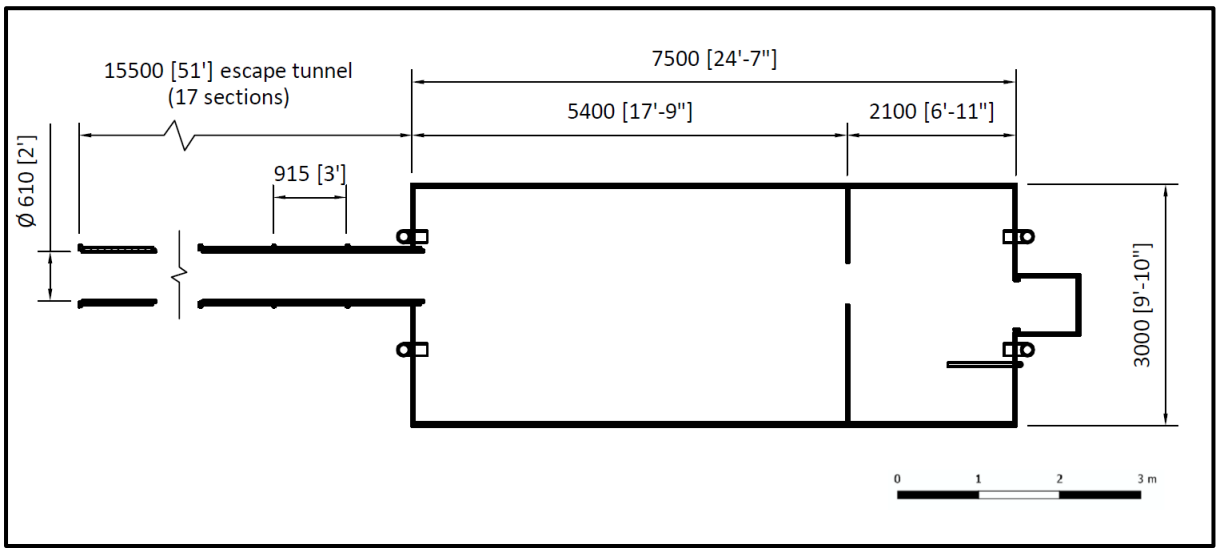

Fig 7 Plan view of hideout *

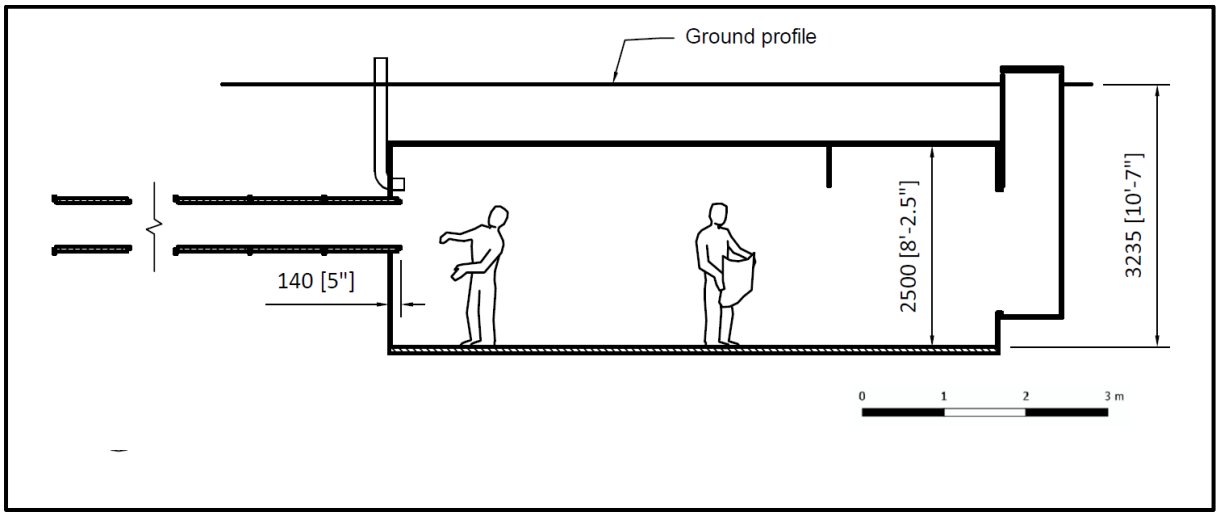

Fig 8 Profile of hideout along longitudinal axis *

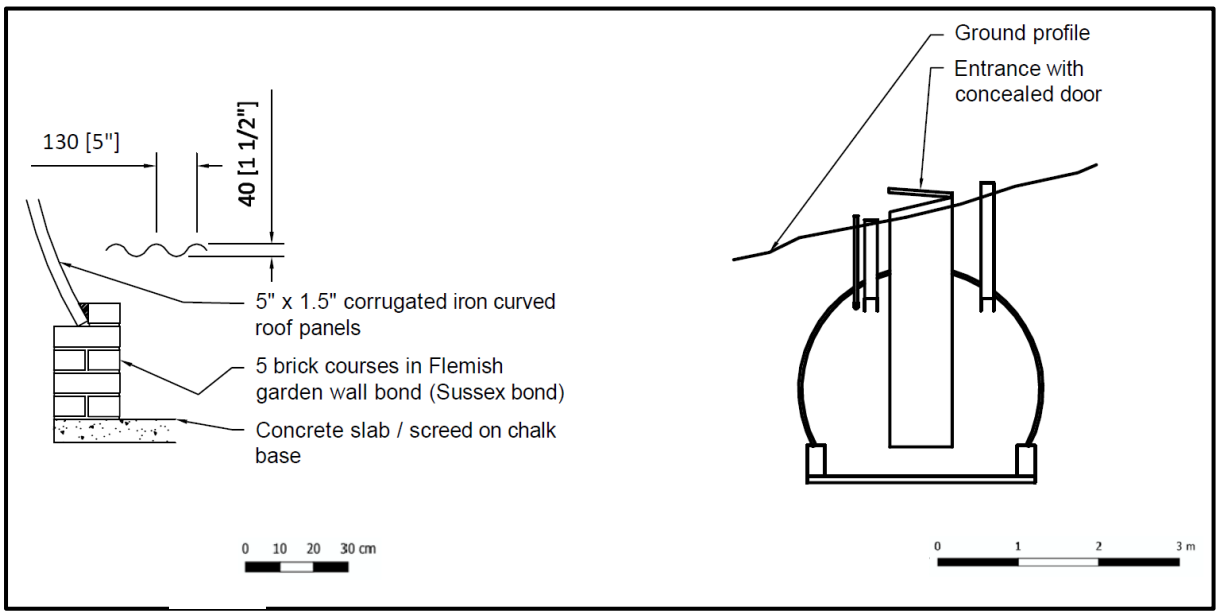

Fig 9 Cross Section of hideout 2.5 metres from entrance showing current ground level *

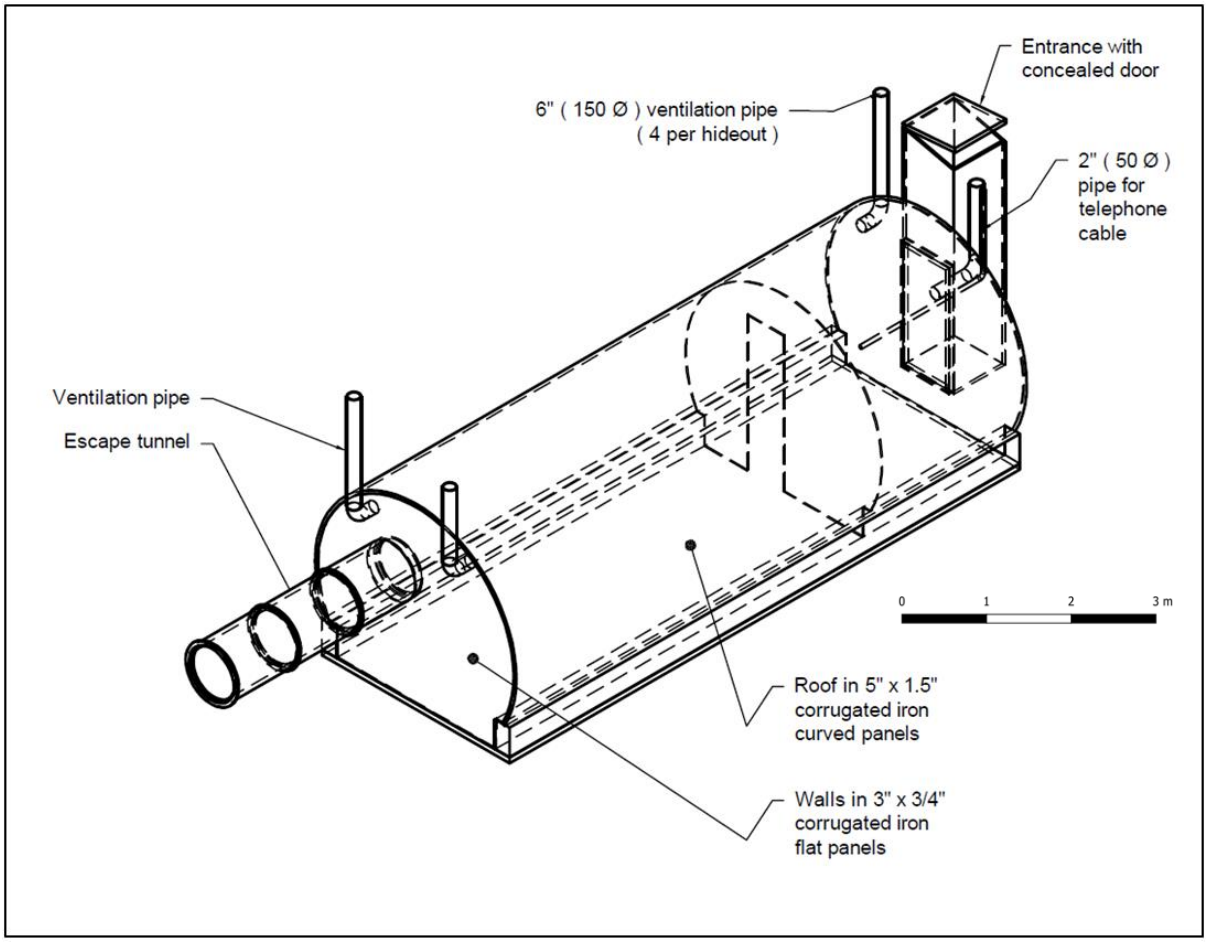

Fig 10 Isometric representation

* Note all drawings include an entrance which has been added based on evidence from other sites.

What is clear is that building the hideout was a significant undertaking. Evidence from the chalk face beyond the back wall and also near the entrance suggests that the ground level when it was built was similar to what it is today. That implies that in order to bury the hideout a trench 3 metres wide, 3.5 metres deep and 9 metres long was needed. A total of 95 cubic metres of material, mostly chalk, had to be removed. This does not include the material removed when digging the trench for the escape tunnel.

After the trench had been dug, the concrete floor would have been laid and courses of bricks, 5 bricks high, laid along each side (see Figs 9, 11 & 16). The corrugated iron roof would have then been assembled resting on top of the brick walls. This is fabricated from sheets that would have arrived on site, preformed and predrilled in a standard pattern. Three sheets are needed to cover the width of the hideout (see Fig 12). The internal space 3 metres wide and 2.5 metres high creates a comfortable working area

The corrugated iron sheets are bolted together (see Figs 11 & 12) any unused holes are blanked off by bolts. The corrugated iron roof sheets are 2 to 3 mm thick and form a sturdy roof. Looking at Fig 5 the minimum depth of soil above the hideout across the section is 0.7 metres providing good protection.

The back wall was made from corrugated iron fixed to a wooden frame, most of this has been lost following the partial collapse of the chalk behind the wall.

There is a corrugated iron partition across the hideout located about 2 metres from the entrance to separate the internal living area from the entrance lobby where explosives,

weapons and other tools would have been stored. The corrugated iron forming the partition and the back wall is of a thinner grade than that used in the roof.

There are four 6 in diameter cast iron ventilation shafts, two near the entrance (Figs 2 &14) and two near the back wall (Fig 18). Chicken wire has been used to block them and this probably formed part of the camouflage arrangement to disguise the pipe exits.

The 15 metre long escape tunnel is probably made from seventeen, 914mm (3ft) sections of concrete drainage pipe, 610mm (24 inch) internal diameter and 710mm (28 inch) external diameter (see Figs 3, 12 & 17). To get through a pipe of this diameter, the person has to lie fully prone making it difficult to make a quick exit. The survey confirmed that the tunnel runs on a horizontal level parallel to the axis of the hideout.

Fig 11 Concrete floor supporting 5 course brick walls and corrugated iron roof

Fig 12 View towards back wall showing construction with 3 sheets of corrugated iron spanning the hideout and the collapsed section of concrete escape tunnel

The remains of four beds were found in the hideout and the best preserved is shown in Fig 13. These are of a very standard design and were used in most of the hideouts

Fig 13 remains of one of the four beds found in the hideout

Besides the remains of beds and some odd pieces of timber there is little evidence remaining of what was in the hideout when in use.

The beds are similar in design to others we have seen in the Eartham hideout and have been found in other hideouts (ref 4) across Sussex suggesting that they may have been factory made. They have a substantial timber frame covered with wire netting supported on four braced wooden legs.

There would have been a telephone cable connecting the hideout to the observation post, probably entering through the 2" steel pipe (Figs 14 & 15) but we did not find it.

Fig 14 – Main entrance showing Ventilation and telephone cable pipes.

Fig 15 – Telephone cable conduit entry point.

7. Condition Assessment

CDAS does not have any particular expertise relating to underground structures. The observations made here may need to be confirmed by others more expert in the field.

Whilst CDAS recognises that the hideout is of significant interest it is also clear that it cannot be preserved at any reasonable cost. The task is to slow the rate of deterioration if possible and minimise any hazards to the public at large. The site is accessible to walkers and lies close to a path regularly used by cross country cyclists.

The central corrugated iron core of the hideout seems to be sound and in no immediate danger of collapse. The fastenings joining the individual sheets are intact and there is no sign of any material seeping through the joints.

As the trees near the entrance will continue to grow it is anticipated that the entrance will gradually fill-up. The entrance area is fenced off and we do not see this a particular hazard or major cause of concern. Some action to curtail the growth of the trees may be needed at some point.

The main concern on the site is the condition of the back wall which has partially collapsed and is at risk of further collapse. Fig 17 shows a close-up view of the back wall above the escape tunnel. There is a small area indicated where the roof has completely collapsed creating a hole in the roof. This was confirmed by putting a ranging pole into the hole from above. There is a risk that someone walking over this part of the site could put their foot down the hole and catch their leg on the edge of the corrugated iron roof below.

To the right of the opening shown in Fig17 there is an area of the chalk roof covering that has partially collapsed creating a “dome”. The thickness of the chalk covering at this point is much less than at other points and is at risk of complete collapse adding to the hazard in this area.

We do not believe it is practical to shore up this part of the site, fencing it off to prevent access would seem a better solution. It might be best to consider fencing off the whole area from around the main entrance to beyond the back wall.

The far end of the escape tunnel is partially obscured by soil and vegetation and it can be expected that it will gradually disappear from view. This is not seen as a major issue as it would be relatively easy to locate it and dig it out if ever there were a need for further investigation.

Fig 16 view from back wall towards entrance showing earth spill into entrance

Fig 17 Close up view of back wall showing areas at risk. Also shows two ventilation pipes and two sections of concrete escape tunnel

8. References

1. LiDAR Survey, 2015, South Downs National Park Authority (SDNPA), Secrets of the High Woods Project.
2. Oral History Interview, 2017, John Penfold
3. Bat Hibernation Surveys and Recommendations, 2014, Animal Ecology & Wildlife Consultants, Daniel Whitby.
4. Stewart Angell, 1996, The Secret Sussex Resistance, Middleton Press

9. Acknowledgements

Forestry England for allowing access to the site.

Sussex Bat Group for assisting with site visits and for guidance and advice in connection with the resident bats.

Ian Tomkinson for work on the drawings.

Appendix 1

CHICHESTER AND DISTRICT ARCHAEOLOGY SOCIETY - RISK ASSESSMENT FORM

SITE NAME: Houghton Auxiliary Hideout	SITE CODE: HO18	ASSESSMENT BY: Mike Kallaway DATE: 24/04/2019	PAGE 1 OF 2
ACTIVITY: Surveying and recording June 2019		No. of people present: 4 to 6	

HAZARD IDENTIFICATION

HAZARDS IDENTIFIED	People at risk (tick)		Likelihood of injury (tick)			NOTES	ASSESSED BY
	Volunteers*	Public	Probable	Possible	Remote		
1. Beware ticks	✓			✓		From deer – can cause Lymes disease	
2. Avoid leptospiosis	✓			✓		An infectious disease that affects humans & animals	
3. Exposure to sun, wind and rain	✓			✓		No shelter available on site	
4. Rough ground/rampant vegetation	✓			✓		Across all of search area	
5. Insect bites	✓			✓			

ACTION PLAN

Hazard No.	MEASURES REQUIRED TO REDUCE RISK TO ACCEPTABLE LEVEL	NOTES	All measures in place. Signed/dated by Site Supervisor
1	Check for skin for ticks		
2.	Wash hands before eating		
3.	Volunteers advised to bring and use suntan cream and drink plenty of fluid. Use of hats and windproof jackets advised		
4.	Boots to be worn where possible		
5.	First Aid kit available		

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HAZARD IDENTIFICATION

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	Volunteers*	Public	Probable	Possible	Remote		
1. Falling structure, sharp projections and debris	✓			✓		Some risk inside and at entrance to hideout,	
2. Collapsed section near rear wall of hideout	✓			✓		Mark out area with tape and lamp irons at start of work	
3 Trip hazard from rampant vegetation, rough ground and debris	✓			✓		Make volunteers aware	
.4. Cuts from contact with brambles and sharp objects						Make volunteers aware	

ACTION PLAN

Hazard No.	MEASURES REQUIRED TO REDUCE RISK TO ACCEPTABLE LEVEL	NOTES	All measures in place. Signed/dated by Site Supervisor
1.	Take care inside the structure. Review risk assessment as work progresses (Dynamic Risk Assessment) If risk of collapse becomes "probable" terminate work.	Wear suitable clothing, Hard Hat, Safety Boots and Safety Glasses. No more than two people inside hideout at any time. Do not venture into inner section of hideout, use remote measuring techniques as in agreed plan. Take great care not to disturb any beams that could be supporting the roof. Avoid walking on roof if anyone is inside. Hideout is well ventilated so no risk of oxygen depletion	
2	Secure area before starting work	When marking out avoid walking on top of hideout and within a metre of collapsed section	
3.	Volunteers advised. First Aid kit, available	Lots of brambles, tree roots and structural debris on ground	
4.	Protect exposed areas of skin	Wear gloves	