

Tactile safety inspection of high-level fabric

REPORT Hailes Castle PIC148



October 2022



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ENVIRONMENT
SCOTLAND

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Document Control

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Version Control

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V0001	20/10/2022	Draft	[REDACTED]	First draft
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High-Level Tactile Inspection: Report - Introduction



PIC ID # ↓	PIC148	Site name	Hailes Castle		
Inspection start	09/06/2022	Inspection end	07/09/2022	Submission	20/10/2022
Lead Inspector	[REDACTED]				
Other	[REDACTED]				

Introduction:

The High-Level Fabric Inspection of Hailes Castle was lead by [REDACTED], Deputy Lead Inspector and carried out with Inspectors [REDACTED]. Risk Mitigation survey 09/06/2022 and Main HLM Survey from 29/08/2022 to 07/09/2022. The Inspection Team assessed 15 zones covering the whole monument, using high level access equipment including rope access and ladders.

HLF Inspection Risk Matrix:

HES-T1C-HLF-RAS-X-X-V0102-RiskMatrix

Consequence \ Probability		1	2	3	4	5
		No injury	Minor injury	Moderate injury	Major injury	Fatal or life-altering injury
5	Fabric fall almost certain	5	10	15	20	25
4	Fabric fall highly likely	4	8	12	16	20
3	Fabric fall likely	3	6	9	12	15
2	Fabric fall unlikely	2	4	6	8	10
1	Fabric fall highly unlikely	1	2	3	4	5

RISK RATING	RISK SCORE RANGE
High	15 - 25
Medium	10 - 14
Low	1 - 9

Re-inspection frequency: (in years)

[REDACTED]



		Annual Visitor Numbers				
		up to 5 k	5-20 k	20 - 100 k	100k - 2m	over 2 m
Identified Risk Rating	Low	5 years	5 years	5 years	4 years	4 years
	Medium	3 years	3 years	2.5 years	2 years	2 years
	High	1 year	1 year	1 year	1 year	0.5 year

Note: No Annual Visitor Numbers Available

HL Zones:

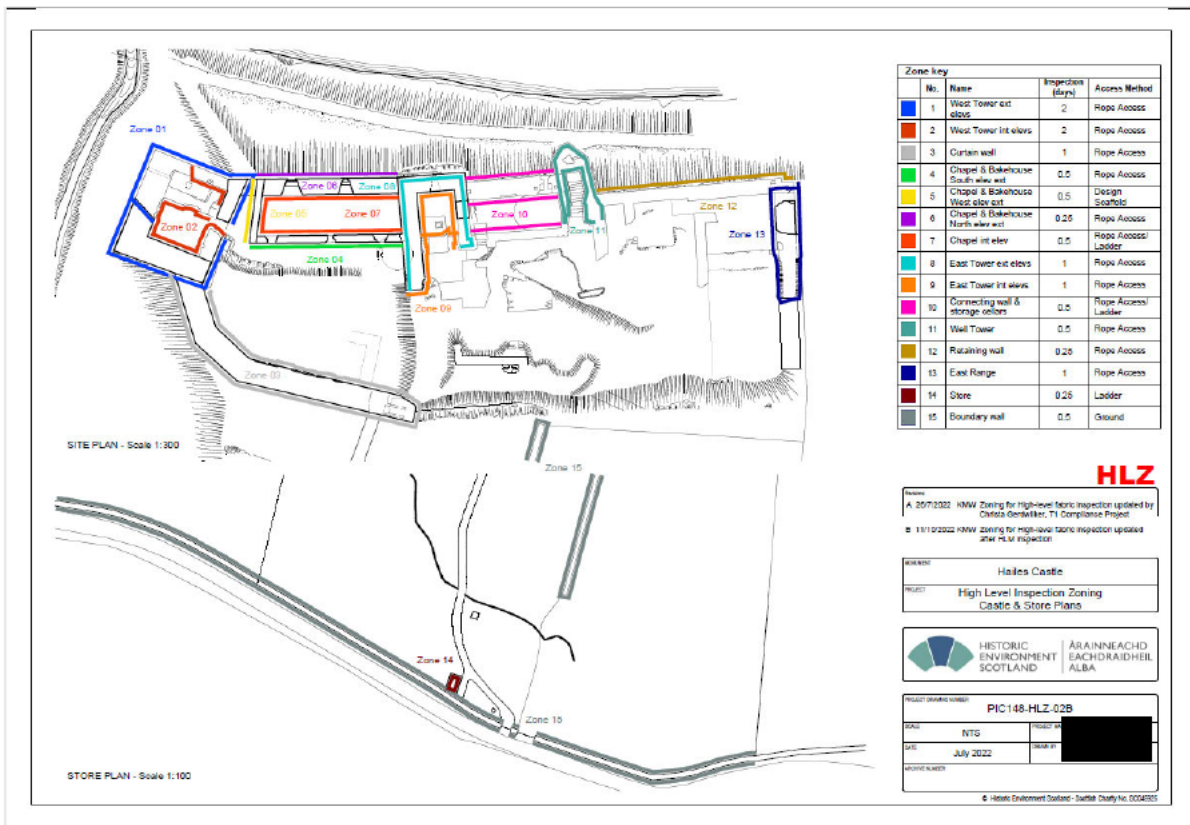
Zone:	Colour:	Zone Name:
1		West Tower Exterior Elevations
2		West Tower Int Elevations
3		Curtain Wall
4		Chapel & Bakehouse South Elevation Exterior
5		Chapel & Bakehouse West Elevation Exterior
6		Chapel & Bakehouse North Elevation Exterior
7		Chapel Interior
8		East Tower External Elevations
9		East Tower - Internal Elevations
10		Connecting wall & storage cellars
11		Well Tower
12		North Curtain footings (East of Well Tower)
13		East Range: East Wall (fragment)
14		Store
15		Boundary Walls

Link to 3D model: Not Available

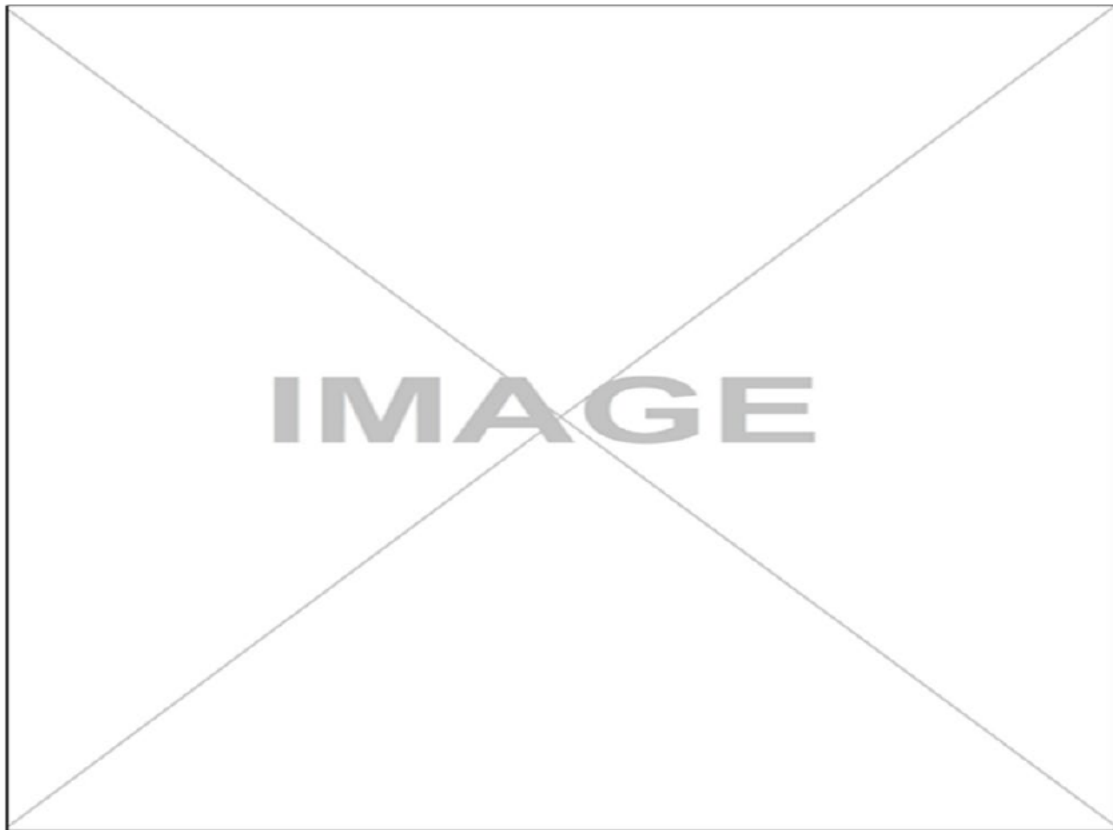
High-Level Tactile Inspection: Report - High-Level Zoning Drawings



Click on link below image to open drawing in PDF viewer:



[PIC148-HLZ-02B](#)



High-Level Tactile Inspection: Report - Summary dashboard



PIC ID#	PIC148	Site name	Hailes Castle		
Submission	20/10/2022	Number of zones	15		
Select zone of which data should be displayed ↓	All zones	Number of observations	61		

Identified Risk



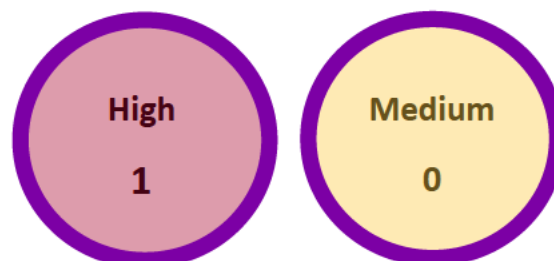
Residual Risk

After Inspection Action



Residual Risk

Mitigated with applied Access Restriction in place



Inspection Action:

Class V Report = Fabric detached during tactile inspection	Access Restriction = Risk of fabric falling and causing harm			Monitor Observation / Plan Repairs = No immediate action
	Full site, notifiable	Partial site, notifiable	Partial site, not notifiable	
33	0	0	1	27

Inspection types:	Tactile	61	Visual	0
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Key comments:

KEY FINDINGS:

- The castle exterior North Ranges faces on the riverside no observed risk and outer faces of the West Tower and Curtain Wall to the south had few risks despite no conservation work since the mid 20th century. The interior of the castle has many walls on all castle elements that are either open jointed and/or have areas of



unconsolidated wall core. Fortunately despite the minimal conservation work undertaken stones that were loose were mainly small pinnings on facework or small stones on corework.

- The Chapel walls both internally and externally (excluding the external north face) are open jointed and eroding and stones will continue to detach. See Predominant Risks for the West Gable condition.
- The East Tower interior has areas of unstable corework. (NB The only area of the castle that had an access restriction prior to the monument being Heras fenced).

PREDOMINANT RISKS:

- Chapel: The West Gable was not inspected as it was clear from visual inspection at familiarisation visit that it is potentially unstable. There is a central section of extremely open jointed eroded small build masonry on the gable's west face. Cracks are also apparent on the inner east face and the gable head wall above is very slender. (See Access Restriction Plan)
- West Tower: The North East Corner is a slender loft pinnacle remnant, there are vertical cracks between mid 20th century roughracking piers buttressing to the two wall tusk ends of the lost east wall and north wall.
- East Tower: The interior face at the North West corner has an area of unstable wall core just under the wallhead, survey perceived the unstable condition of the exposed high level corework on the interior faces of the tower. (See Access Restriction Plan)

High-Level Tactile Inspection: Report - Access Scope



PIC ID #	PIC148	Site name	Hailes Castle
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Access methods: Select all methods used to conduction inspection ↓

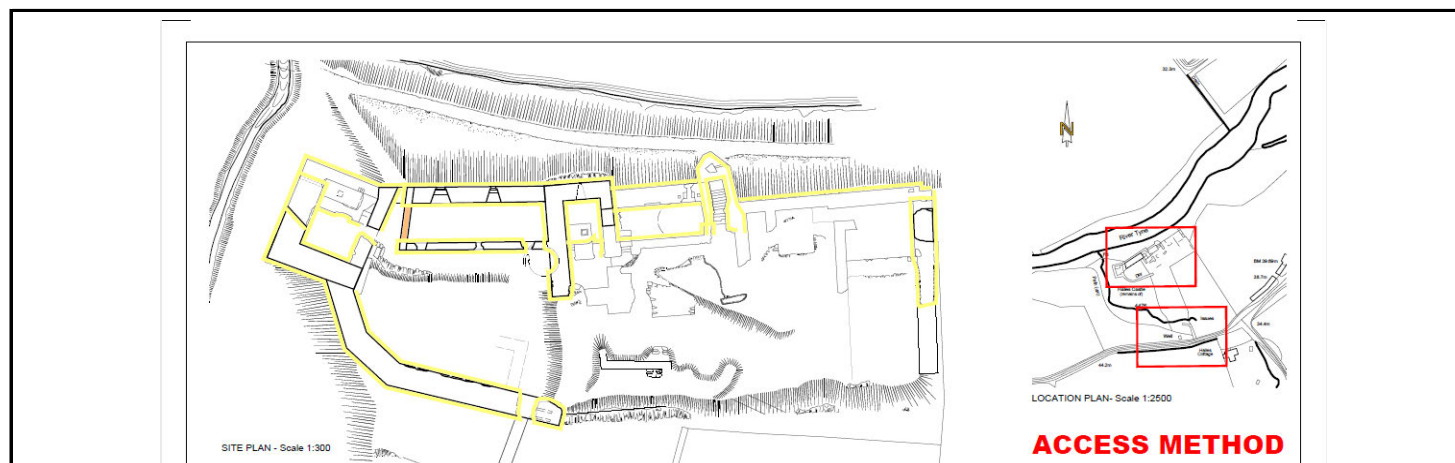
MEWP	<input type="checkbox"/>	Design Scaffold	<input type="checkbox"/>	Alloy Tower Scaffold	<input type="checkbox"/>
Rope Access	Yes	Steeplejack	<input type="checkbox"/>	Ladder	Yes
Ground	<input type="checkbox"/>	Binoculars / Photo	Yes	UAV	<input type="checkbox"/>
Other method	<input type="checkbox"/>	If yes, details:	<input type="text"/>		
Ground protection / tracking required: <input type="checkbox"/>					
External Contractor appointed for access requirements: <input type="checkbox"/> Yes					

Inspection info:

Limitations of inspection: Virtually all walls could only surveyed by rope access. Currently there is no available access for inspection/repair by MEWP. Potentially future access could be provided to allow MEWP access to the western half of the castle i.e. the all the walls to the west courtyard and the outer south face of the Curtain Wall. (An anchor point has been installed on the South Face of the West Tower to allow wallhead access.)

Areas not inspected: The condition of west external face and inner face of the Chapel's West Gable were considered unsafe to survey and on commencement wallhead access of the East Tower from the north east corner all the exposed corework of the north and west interior faces was considered unsafe to survey. The external face of the east wall was only visually inspected as ropes could not be used safely over fragile remains of string course at wallhead

Click on link below image to open drawing in PDF viewer:



High-Level Tactile Inspection: Report - Access Scope



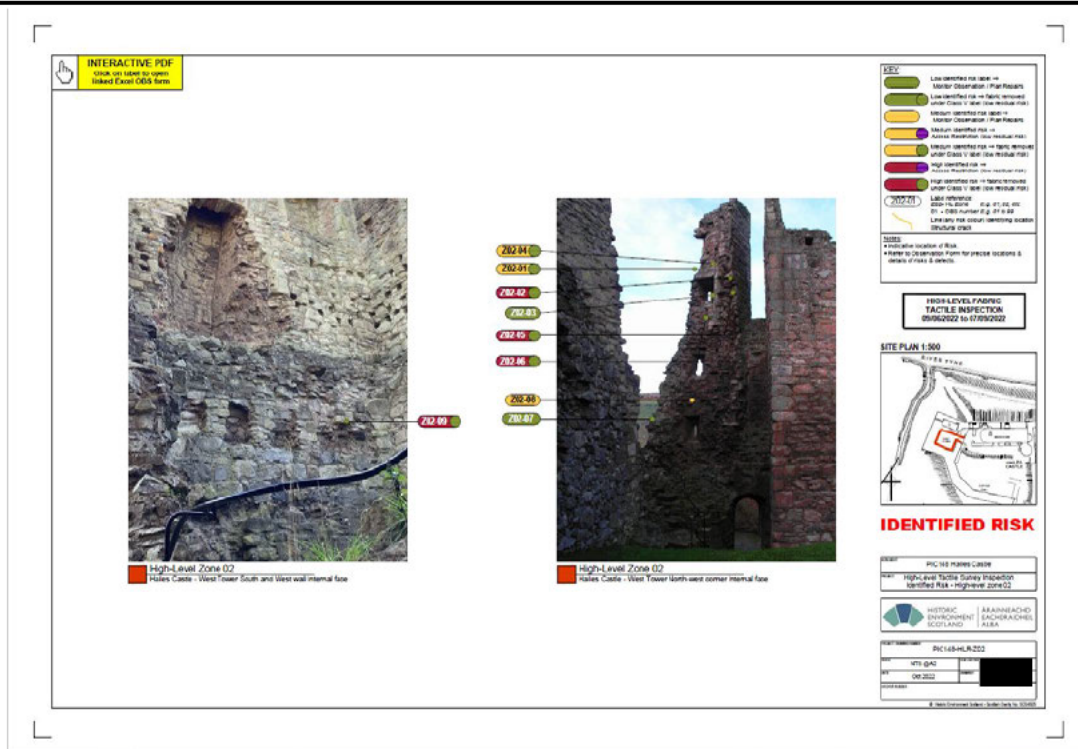
[PIC148-HLZ-03B](#)



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[PIC148-HLR-Z01](#)



[PIC148-HLR-Z02](#)

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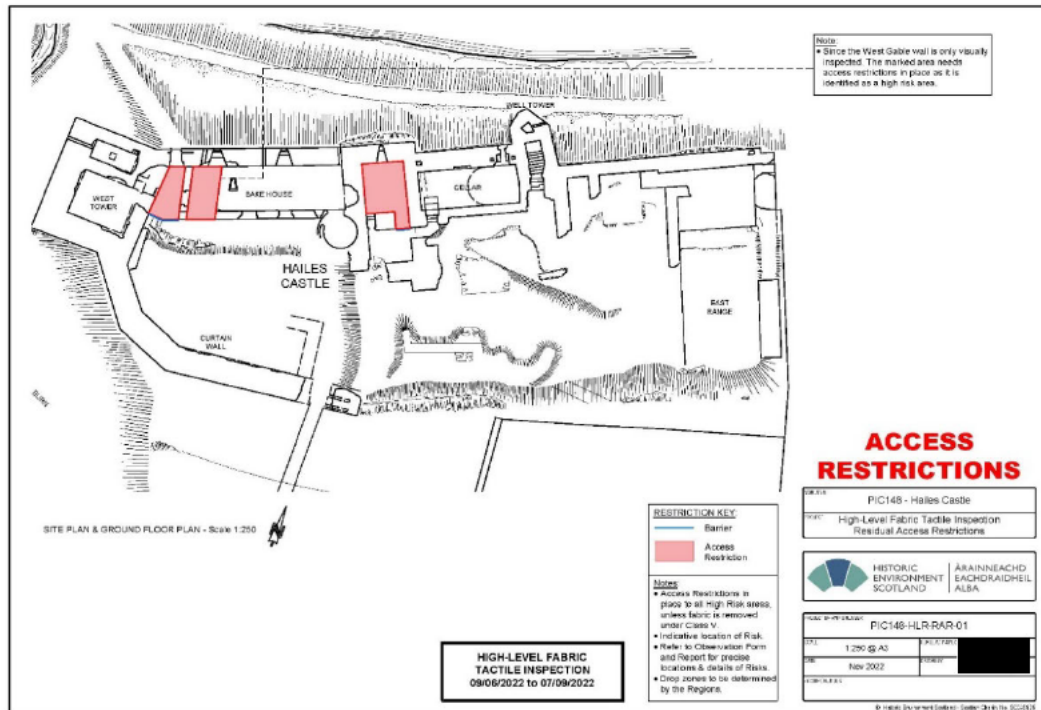
IMAGE



High-Level Tactile Inspection: Report - Access Restrictions Plan



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[PIC148-HLR-RAR-01](#)