

# Tactile safety inspection of high-level fabric

REPORT  
Craigmillar Castle  
PIC 134



HISTORIC  
ENVIRONMENT  
SCOTLAND

ÀRAINNEACHD  
EACHDRAIDHEIL  
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**CONTROL SHEET**

**Document Control**

Title:	Tactile safety inspection of high-level fabric. Report PIC134 Craigmillar Castle
Authors:	
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Approved by:	
Date of Approval:	
Version Number:	V0200

### Version Control

Version	Date	Status	Prepared by	Amendments
V0100	23/04/2021	Approved		First approved version
V0200	21/05/2021	Approved		High-Level Risk drawings updated from Inherent Risk to Identified Risk. Dashboard risk levels corrected.



## Introduction:

The High Level Fabric Inspection of Craigmillar was lead by [REDACTED], Historic Building Fabric Assessor (HBFA) and carried out with HBFA [REDACTED] from 24.02.2021 - 01.04.2021.

The Tier 1 Team assessed 11 zones covering the whole monument, using a range of high level access equipment including rope access, MEWP, alloy towers and ladders. MEWPs were lifted into the gardens using a spider crane while ground mats or alloy tracks below MEWPs protected the ground and archaeologically sensitive areas in particular.

The report summarises the detailed information collated by individual OBS forms for each zone. The OBS forms are accessed here:

[https://hescot.sharepoint.com/sites/Teams\\_Tier1Compliance/Shared%20Documents/1%20High-Level%20Fabric/Inspections/Completed%20Inspections/PIC134-CraigmillarCastle](https://hescot.sharepoint.com/sites/Teams_Tier1Compliance/Shared%20Documents/1%20High-Level%20Fabric/Inspections/Completed%20Inspections/PIC134-CraigmillarCastle)

## Re-inspection frequency: (in years)

		Annual Visitor Numbers				
		up to 5 k	5-20 k	20 - 100 k	100k - 2m	over 2 m
Inherent 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

## HLF Inspection Risk Matrix:

HES-T1C-HLF-RAS-X-X-V0101-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



## HL Zones:

<i>Zone:</i>	<i>Colour:</i>	<i>Zone Name:</i>
1	Blue	Outer Walls Exterior
2	Brown	Outer Courtyard Interior
3	Grey	Chapel
4	Green	East Garden Interior
5	Yellow	Church Building
6	Purple	Terraced Garden
7	Orange	Curtain wall
8	Cyan	Preston Range
9	Light Orange	Tower House Exterior
10	Magenta	Gilmour Range
11	Teal	PIC Boundaries



# High-Level Fabric Inspection: Report - Summary dashboard



PIC number	PIC134	Submission	23/04/2021	Number of zones	11	
Select zone of which data should be displayed ↓				All zones	Number of observations	389

## Identified Risk (Inherent Risk)



## Residual Risk



## High-risk consideration and response

Inaccessible (e.g. physical barrier, heavy shrubbery)	Access restriction: Full site, notifiable	Access restriction: Partial site, notifiable	Access restriction: Partial site, not notifiable	Fabric removal as Class V Consent
0	0	50	4	21

Inspection types:	Tactile	385	Visual	4
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Key comments:



## KEY FINDINGS

The HBFAs identified 389 number of risk areas. Using the matrix, the risk was assigned a level (high, medium or low) and, where appropriate, measures were put in place to reduce the risk. These include access restrictions, repairs with Scheduled Monument Consent or under Section 17 of the Scheduled Monuments Act, when time and permissions allowed. Twenty one (21) items of dangerous fabric were removed and a Class V notification issued.

Re-inspection of zones is recommended within the time scales set out on the previous tab, based on the residual risk of each zone. High risk areas were secured with barriers and the appropriate site access notifications issued. While 50 OBS requiring notifiable access restrictions were identified with a further 4 OBS requiring non-notifiable access restrictions, these were often found in the same areas and therefore required the closure of areas on site.

## PREDOMINANT RISKS:

- The parapet of the Southwest Curtain wall tower (Zone 7) and the Doocot (Zone 1) are at highest risk of substantial masonry fall and present the highest risk to staff, visitors and intruders.
- Loose wall head stones were found lying on top of the South Curtain wall (Zone 7) and the Church walls (Zone 5) in particular.
- Fractured and loose sections of mortar and loose pinning stones at height present the most commonly found risks to the health and safety of persons below. These were particularly prevalent on the South, East and West faces of the Tower (Zone 9), the area between the West elevation of the tower and the Gilmour Range (Zone 10) and the interior and exterior church walls (Zone 5).
- A number of projecting Curtain wall parapet wall soffits are delaminating (Zone 7).
- Vertical cracks were noted on the tower (Zone 9), particularly affecting the South and East faces and penetrating the full wall thickness.
- A number of decayed lintels were identified in the Gilmour Range (Zone 10).

# High-Level Fabric Inspection: Report - Access Scope



<b>PIC number</b>	PIC134	<b>Site name</b>	Craigmillar Castle		
<b>Inspection start:</b>	24/02/2021	<b>Inspection end:</b>	01/04/2021	<b>Submission:</b>	23/04/2021
<b>Lead assessor:</b>	[REDACTED]				
<b>Other assessors:</b>	[REDACTED]				

## Access methods: Select all methods used to conduction inspection ↓

MEWP	Yes	Design Scaffold	No	Alloy Tower Scaffold	Yes
Rope Access	Yes	Steeplejack	No	Ladder	Yes
Ground	Yes	Binoculars / Photo	No	UAV	No
Other method	Yes	If yes, details:	Spider Crane to lift MEWPs into Gardens		
Ground protection / tracking required:		Yes			
External Contractor appointed for access requirments:		Yes			

## Inspection info:

<b>Limitations of inspection:</b>	<p>To prevent accidental damage to trees under Tree Protection Order, high level access to the inner courtyard Curtain Wall and MEWP access below the South elevation of the castle was restricted. However, tactile inspection of adjacent areas and wall heads above gave an indication of the general issues likely to be found here.</p> <p>The inner wall faces of the Preston Range attic gallery were inspected visually only to prevent damage to the fragile floor slabs. Given their low height from the gallery floor, this, in combination with a tactile inspection of the wall heads from external faces, allow for sufficient confidence in the findings of the inspection.</p>
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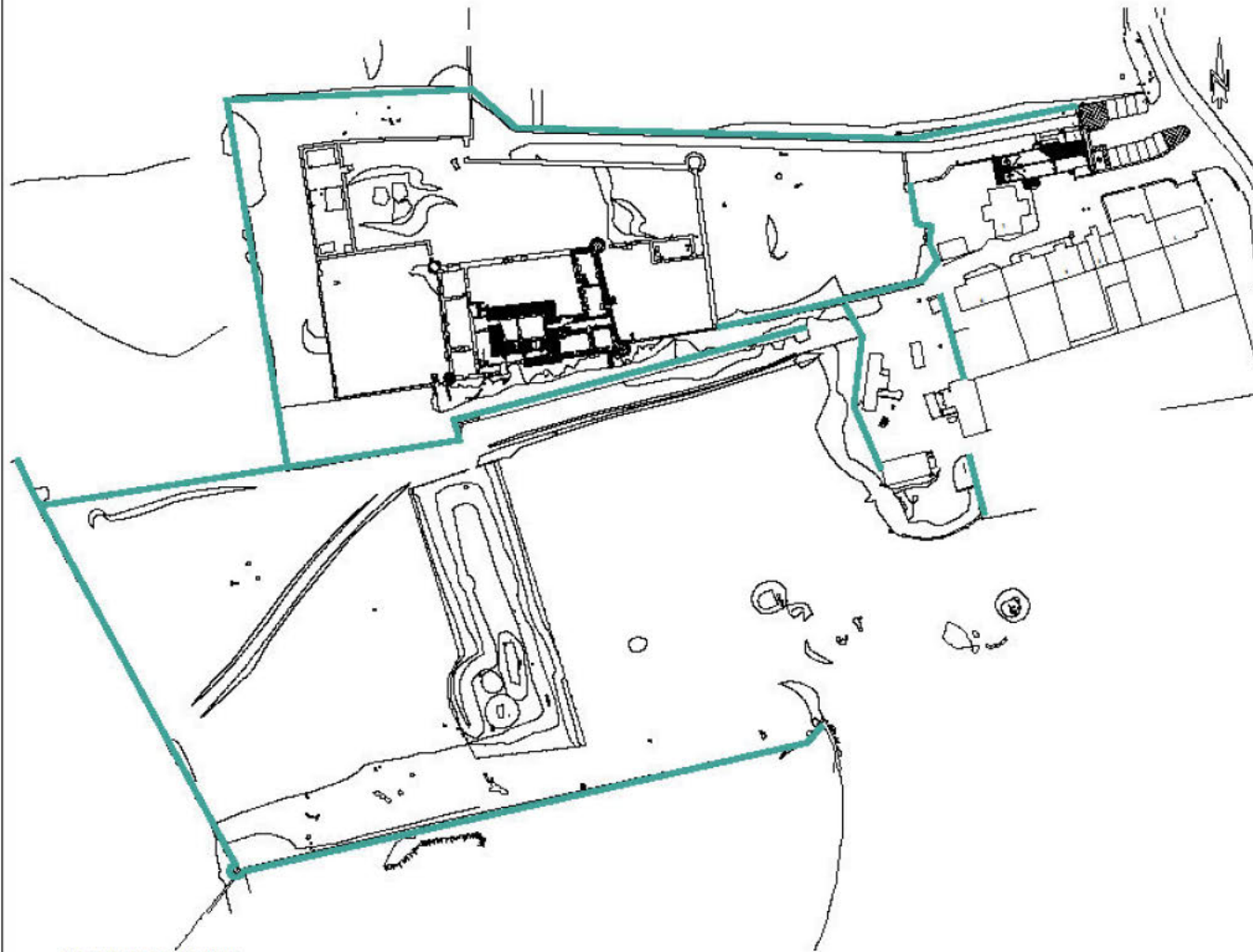
<b>Areas not inspected:</b>	<p>The interior church wall faces inside the MCU Yard and area behind the toilet block could not be reached with any access equipment and a tactile inspection could not be carried out here. Visual observation from the ground indicated that the interior church walls are likely in similar condition to those found on the exterior face and the East and West interior walls of the toilet block end. However, these areas were not risk scored due to restricted visibility.</p> <p>Internal spaces and the roofed visitor centre did not form part of the inspection.</p>
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PDF of HLZ drawings are an Object.  
Zoom into drawing in Excel or double click on drawing to open in PDF viewer.

**Drawing numbers:**

- PIC134-HLZ-01 C
- PIC134-HLZ-02 C
- PIC134-HLZ-03 C
- PIC134-HLZ-04 C



SITE PLAN - Scale 1:1000

<b>KEY:</b>	
	ZONE 11 - 1 day - Ground

**HLZ**

<small>Revisions:</small>		
A	1/12/2020	LLS Zoning for High-level fabric Inspection updated by Christa Gerdlwiler, Tier 1 Compliance Project
B	23/2/2021	LLS Zoning updates & SIGMA Area name labels added
C	21/4/2021	LLS Zoning finalised post T1C HLF Tactile inspection

<small>MONUMENT</small>	Craigmillar Castle
<small>PROJECT</small>	High Level Inspection Zoning Site Plan

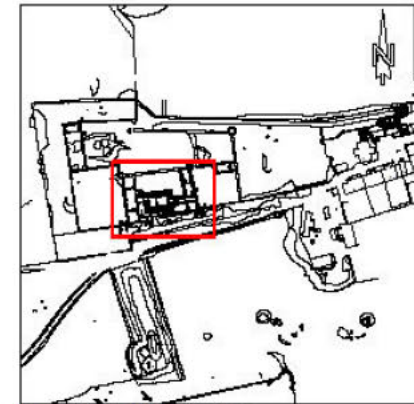
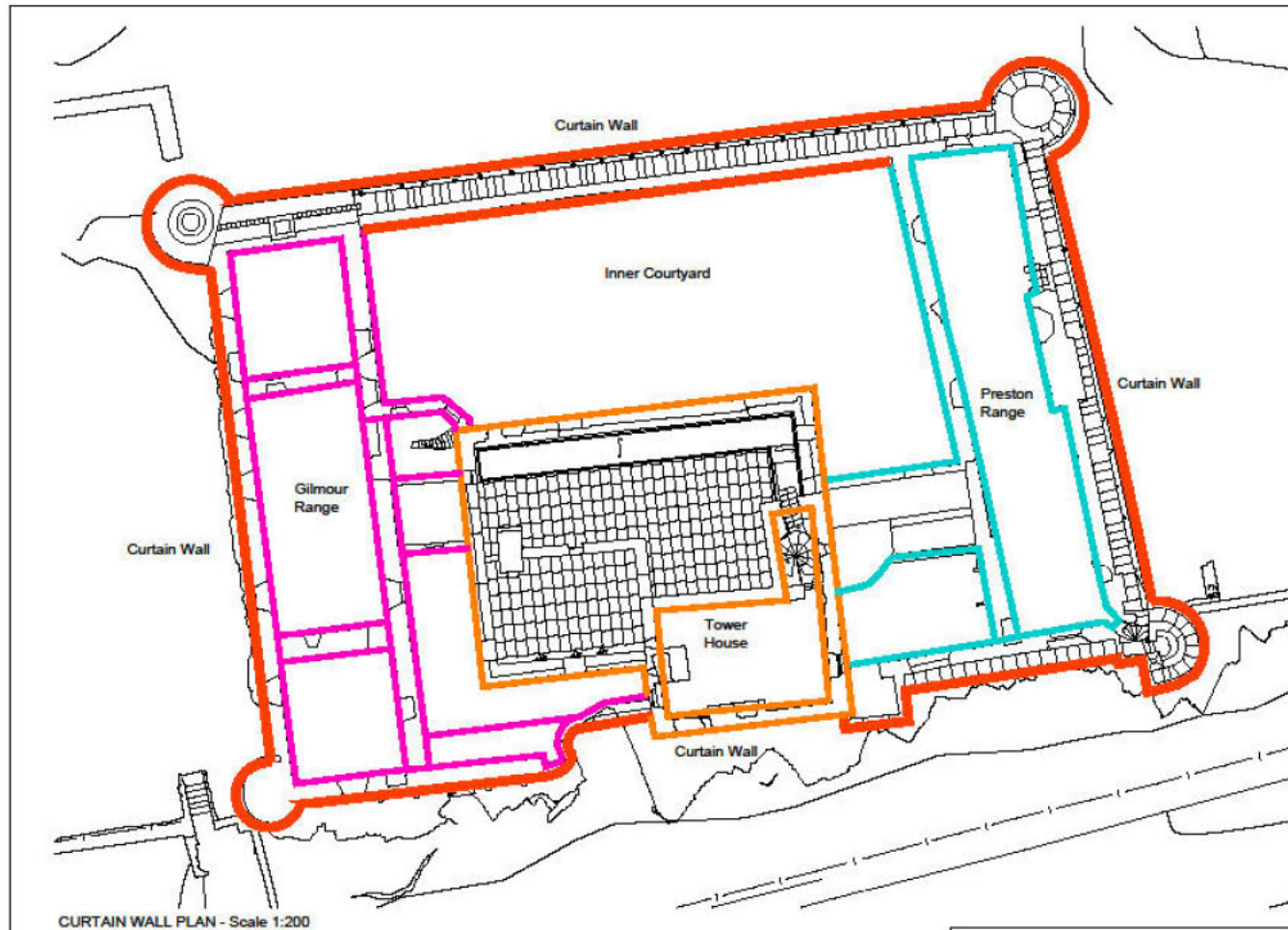


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<small>PROJECT DRAWING NUMBER</small>	
PIC134-HLZ-01 C	
<small>SCALE</small>	1:1000@ A3
<small>DATE</small>	Jan 2019
<small>PROJECT MANAGER</small>	
<small>DRAWN BY</small>	
<small>ARCH/ENGINEER</small>	

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LOCATION PLAN - Scale 1:2500

**HLZ**

Revisions		
A	1/12/2020	LLS Zoning for High-level fabric inspection updated by Christa Gerdtliker, Tier 1 Compliance Project
B	23/2/2021	LLS Zoning updates & SIGMA Area name labels added
C	21/4/2021	LLS Zoning finalised post T1C HLF Tactile inspection

MONUMENT	Craigmillar Castle
PROJECT	High Level Inspection Zoning Curtain Wall Plan



PROJECT DRAWING NUMBER		PIC134-HLZ-02 C
SCALE	1:200/1:2500@ A3	PROJECT MANAGER
DATE	Jan 2019	DRAWN BY

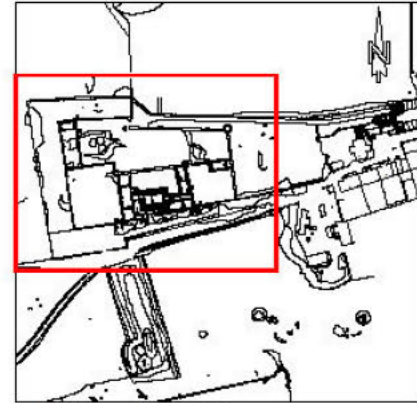
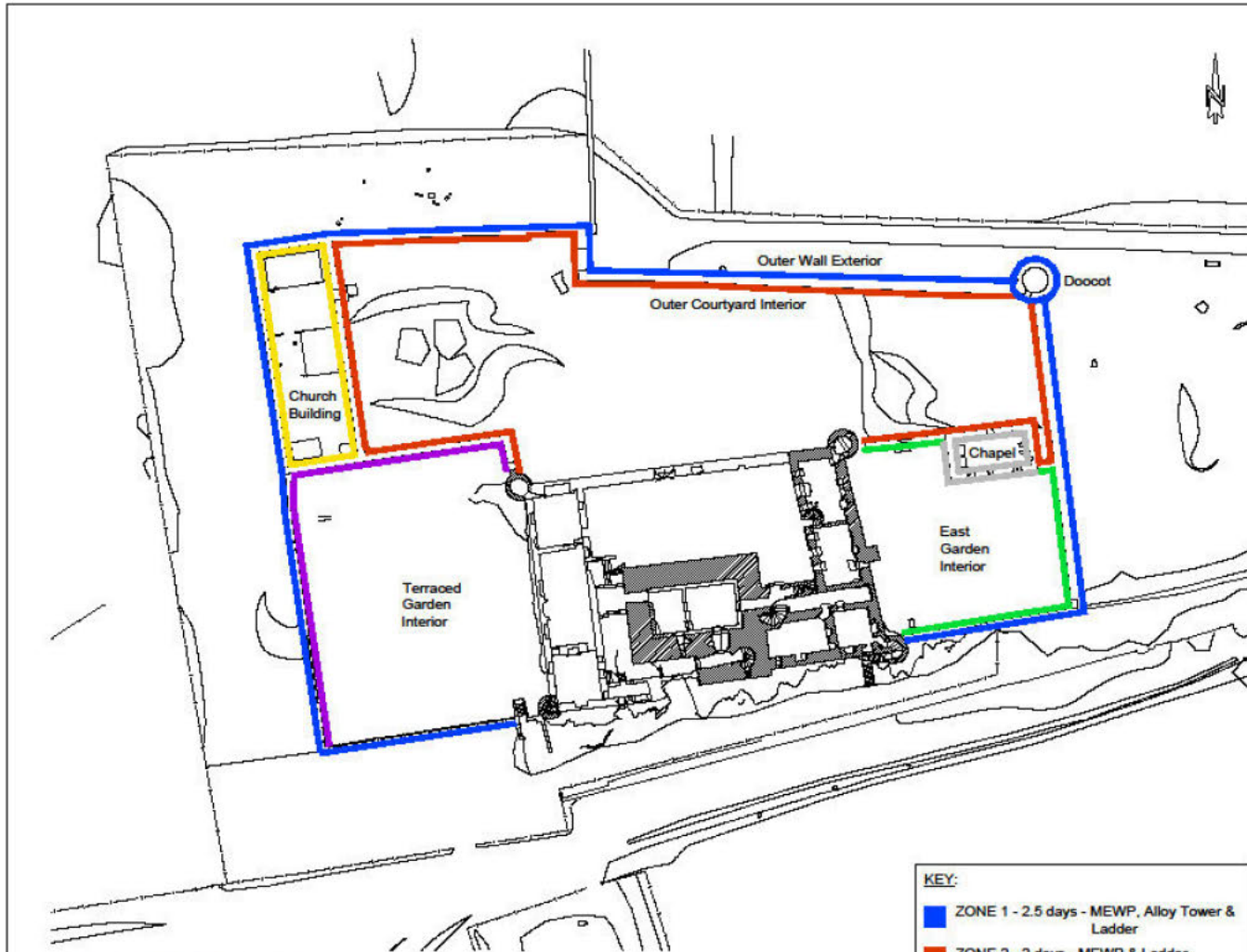
KEY:	
<span style="color: orange;">■</span>	ZONE 7 - 6 days - MEWP
<span style="color: cyan;">■</span>	ZONE 8 - 1 day - MEWP, Alloy Tower & Ground
<span style="color: yellow;">■</span>	ZONE 9 - 4 days - MEWP, Rope Access & Ladder
<span style="color: magenta;">■</span>	ZONE 10 - 4 days - MEWP, Alloy Tower, Rope Access & Ladder

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ARCHIVE NUMBER

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LOCATION PLAN - Scale 1:2500

**HLZ**

- Revisions
- A 1/12/2020 LLS Zoning for High-level fabric inspection updated by Christa Gerdtliker, Tier 1 Compliance Project
  - B 23/2/2021 LLS Zoning updates & SIGMA Area name labels added
  - C 21/4/2021 LLS Zoning finalised post T1C HLF Tactile Inspection

MONUMENT	Craigmillar Castle
PROJECT	High Level Inspection Zoning Outer Wall Plan



PROJECT DRAWING NUMBER

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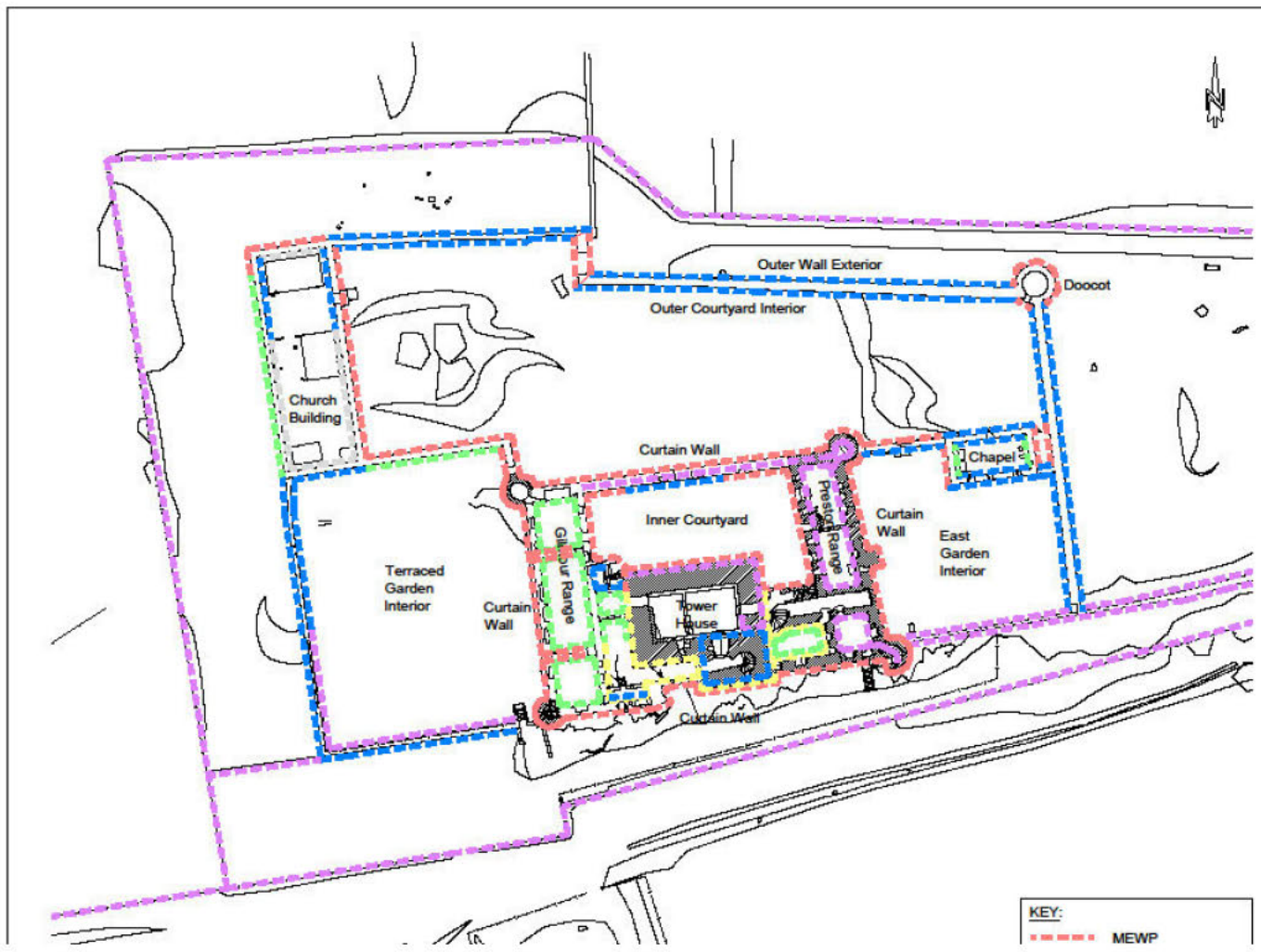




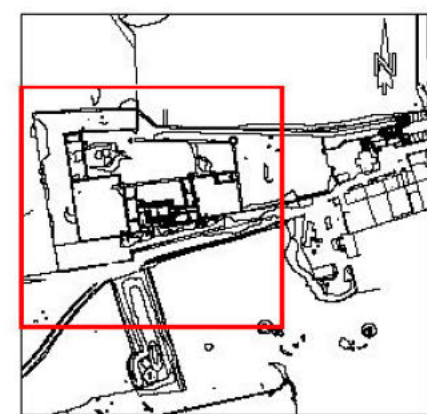
Ground	
<span style="color: green;">■</span>	ZONE 4 - 1 hour - MEWP, Ladder & Ground
<span style="color: yellow;">■</span>	ZONE 5 - 1/2 day - Alloy Tower & Ladder
<span style="color: purple;">■</span>	ZONE 6 - 3/4 day - Alloy Tower & Ladder

PIC134-HLZ-03 C	
SCALE	1:1000@ A3
DATE	Jan 2019
PROJECT MANAGER	
DRAWN BY	
ARCHIVE NUMBER	

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<b>KEY:</b>
<span style="color: red;">- - - - -</span> MEWP



LOCATION PLAN - Scale 1:2500

## ACCESS

<b>Revisions</b>	
A	1/12/2020 LLS Zoning for High-level fabric inspection updated by Christa Gerdwiker, Tier 1 Compliance Project
B	23/2/2021 LLS Access for High-level fabric inspection updated by Christa Gerdwiker, Tier 1 Compliance Project
C	21/4/2021 LLS Access methods used during T1C HLF Tactile Inspection
<b>WORKSHEET</b>	
Craigmillar Castle	
<b>PROJECT</b>	
High Level Inspection Zoning Access Plan	

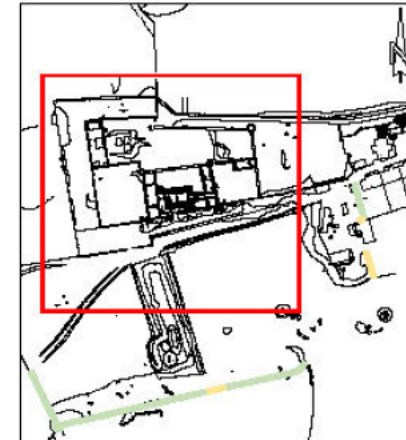
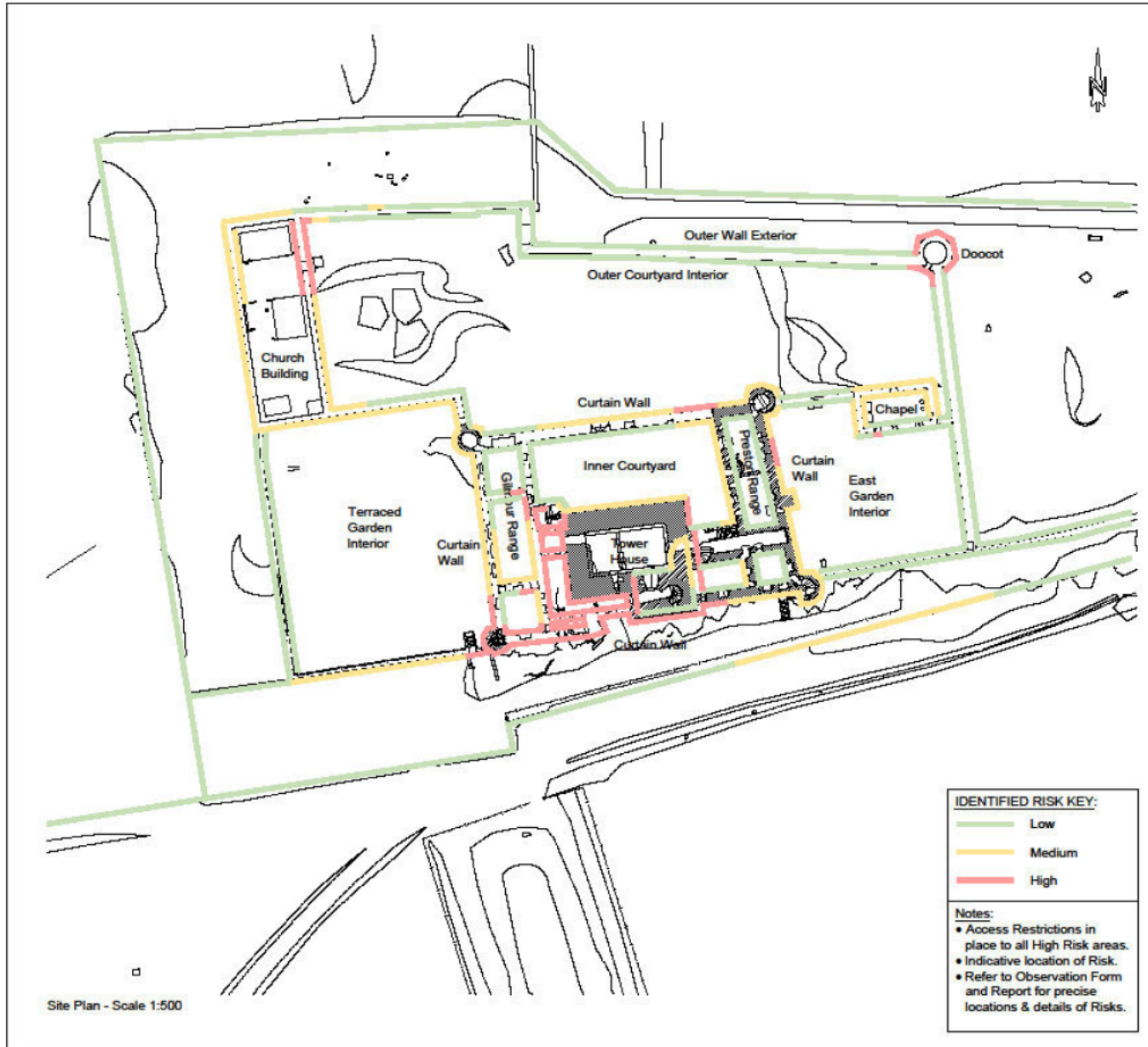


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# High-Level Fabric Inspection: Report - High-Level Zoning Drawing(s)







LOCATION PLAN - Scale 1:2500

HIGH-LEVEL FABRIC TACTILE INSPECTION CARRIED OUT 24/02/2021 to 01/04/2021

## IDENTIFIED RISK

Revision: A 21/05/2021 LLS Renamed to "Identified Risk" from "Residual Risk"

MONUMENT	Craigmillar Castle
PROJECT	High-Level Fabric Tactile Inspection Identified Risk Map Overview



PROJECT DRAWING NUMBER	PIC134-HLR-01 A	
SCALE	1:500@ A3	PROJECT MANAGER
DATE	21/04/2021	DRAWN BY
ARCHIVE NUMBER		

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Drawing numbers:

PIC134-HLR-01 A

