

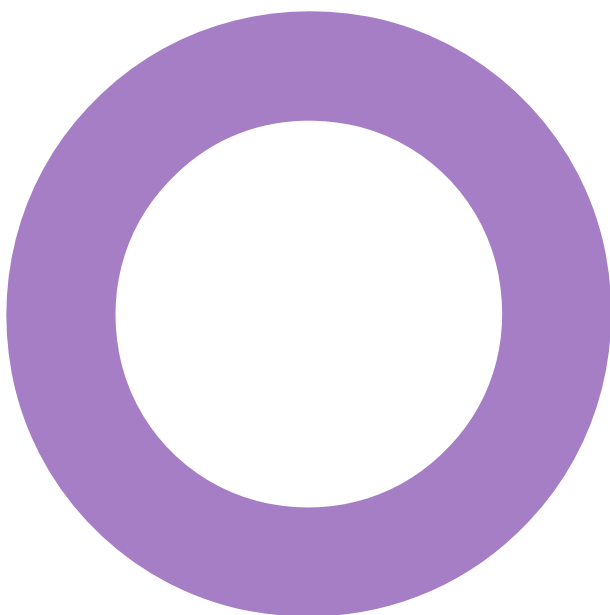
Belsay Hall, Hall Re-Roofing. Northumberland.

English Heritage Trust.

MEP ENGINEERING

PLANNING STATEMENT – HALL LIGHTNING PROTECTION

REVISION 00 – 09 AUGUST 2021



Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
00	09-08-2021	Initial Issue	IWD	BR	ICC

This document has been prepared for English Heritage Trust only and solely for the purposes expressly defined herein. We owe no duty of care to any third parties in respect of its content. Therefore, unless expressly agreed by us in signed writing, we hereby exclude all liability to third parties, including liability for negligence, save only for liabilities that cannot be so excluded by operation of applicable law. The consequences of climate change and the effects of future changes in climatic conditions cannot be accurately predicted. This report has been based solely on the specific design assumptions and criteria stated herein.

Project number: 1441200

Document reference: REP-1441200-08-IWD-210809-Belsay Hall Lightning Protection Planning Statement_Rev 00

Contents.

Audit sheet.	2
1. Introduction	4
2. Hall Context	4
3. Existing System	5
4. East Elevation	6
5. South Elevation	6
6. West Elevation	7
7. North Elevation	7
8. Proposed Materials	8
9. Related Drawings	8

1. Introduction

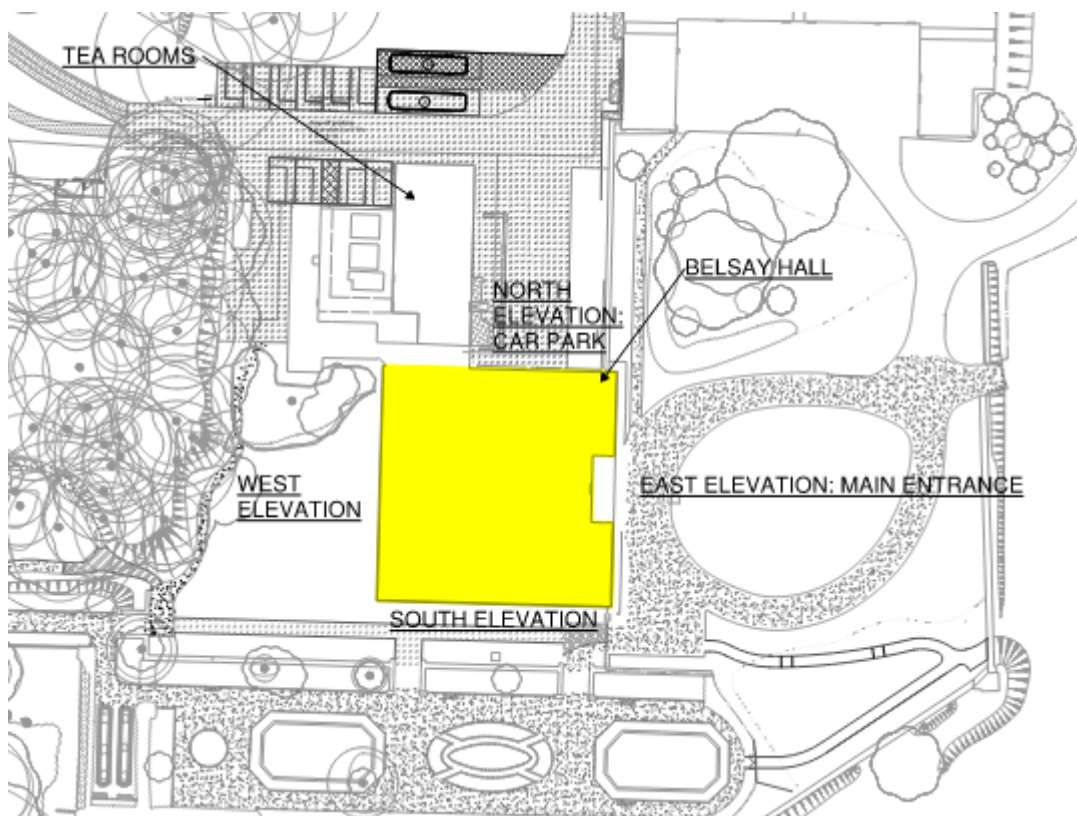
The following statement has been produced to accompany the planning application for the re-roofing of the Hall at Belsay Hall, Castle and Gardens.

This statement describes the proposed lightning protection system that the English Heritage Trust are considering incorporating into the re-roofing of the existing Hall.

2. Hall Context

The Hall is approximately square in footprint and has four distinct elevations i.e. North, South, East and West facing façades. The East facing façade is the main entrance to the Hall and the North facing façade bounds on to the Visitor Car Park and Tea Rooms.

The Hall is a Grade I listed building and can be identified in the image below:



Belsay Hall Site Context

The lightning protection scheme that is being considered is sympathetic to the historic integrity of the Hall. The majority of the proposed system has been positioned on the roof and North elevation that is the least sensitive elevation and bounds onto the Visitor Car Park.

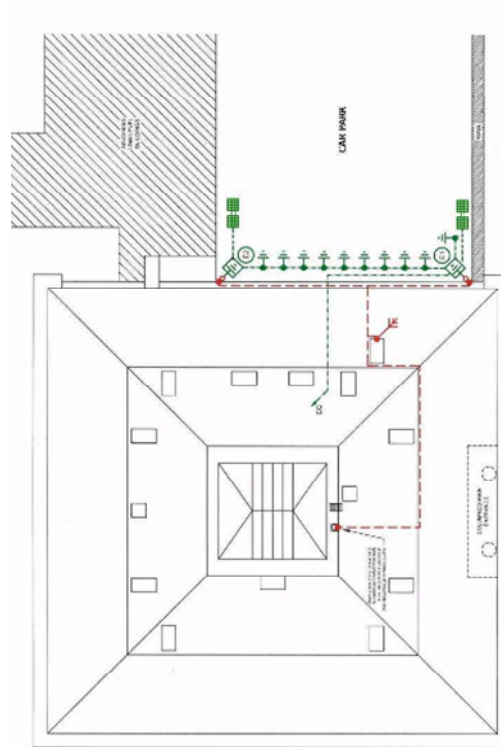
The proposed lightning protection scheme is to achieve compliance with BS EN 62305-3 and includes a roof termination network and down conductors routed to earth.

It is proposed that the lightning protection system will replace the existing Hall lightning protection system that is known not to comply with the above standard.

3. Existing System

The Hall has an existing lightning protection system. This comprises a Helita Pulsar roof termination and two lightning protection down conductors that connect to buried earth grids.

The existing system is shown in the images below:



Existing Hall Lightning Protection System



Existing Lightning Protection Down Conductor



Existing Lightning Protection Fixing

4. East Elevation

This elevation is the main entrance to the Hall and is the most significant elevation of the building. Therefore, no lightning protection down conductors are to be provided on this elevation.

Below is an image of the East elevation.



East Elevation

5. South Elevation

This elevation faces onto the formal gardens and is also a one of the more significant elevations of the building. Therefore, no lightning protection down conductors are to be provided on this elevation.

This elevation is shown in conjunction with the West elevation in the next section of this statement.

6. West Elevation

In the hierarchy of significance, the West elevation is more significant than the North elevation but not as sensitive as the East and South elevations.

It is not possible to contain all of the lightning protection system on the North elevation. Therefore, three lightning protection down conductors are proposed on this elevation.

Below is an image of the South and West elevations.



West & South Elevations

The green lines on the above image represent the proposed location of the lightning protection down conductors. These have been positioned adjacent to existing wall rebates and justified towards the North elevation to reduce the visual impact of the down conductors.

It should also be noted that the down conductors take the form of an 8mm diameter sheathed conductor, as described later in this report i.e. tradition lightning conductor tapes are not proposed.

7. North Elevation

This elevation is faces towards the Visitor Car Park, has the existing lightning protection system fixed to it as well as the buildings rainwater pipes and other services. It has the least historic significance and is therefore the elevation that it has been proposed to accommodate the majority of the lightning protection down conductors.

Below is an image of the North elevation.



North Elevation

The green lines on the above image represent the proposed location of the lightning protection down conductors. Further details of the proposed down conductors routes can be identified on drawing 1441200-HL-110-RF-GA-E-670-7001 that shows the proposed lightning protection general arrangement.

8. Proposed Materials

It is proposed that the down conductors will take the form of 8mm diameter solid circular Aluminium conductors with a stone coloured UV stabilised PVC covering.

The down conductors are to be fixed to the building using one-piece single screw push-in fixing clips. The clips are to be UV stabilised to prevent degradation from sunlight and are to be non-brittle to protect against cold weather. The proposed clips are similar to the clips that have been deployed on the existing lightning protection installation.

The above descriptions have been provided to aid the appreciation of the proposed components and the exact materials are subject to ongoing scheme development and may differ from the above.

9. Related Drawings

The proposed lightning protection system has been shown on the following design drawing:

- 1441200-HL-110-RF-GA-E-670-7001: Proposed Lightning Protection General Arrangement

This shows the proposed concepts and will be subject to ongoing specialist design development and Client reviews.



IAN DAVIS
ASSOCIATE

+44 113 380 1923
iandavis@hoarelea.com

HOARELEA.COM

6th Floor
Town Centre House
Merrion Centre
Leeds
LS2 8LY
England

