

Listed Building Consent Application
Stables and Kennels to Bradgate House
Grade II* (Listing Number 1361383)

**Application for the Removal and Storage of the Timber
Cupola on the Courtyard Tower and Replacement with a
Temporary Flat Roof**



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1.0 Introduction

- 1.1. This document is intended to accompany the Listed Building Consent Application made by the current freehold owners, Hanson Quarry Products Europe Limited, trading as Heidelberg Materials UK.
- 1.2. The application seeks approval for the removal, dismantling and storage of the Timber Cupola framework, which is currently situated on top of the Courtyard Tower within the southern range of the Grade II* listed structure known as “Stables and Kennels to Bradgate House” hereby referred to as “the Stables”.
- 1.3. The Stables have been subject to works as required by an Urgent Works Notice, served in 2023, by Hinkley and Bosworth Borough Council’s conservation officer, Paul Grundy. This application is identified as crucial in order to work towards the wider protection and conservation of the Stables.

2.0 Project Team

Lead Surveyor

Iain Macpherson MRICS
Property Development Manager
Heidelberg Materials

Assisting Surveyor

Joe Napthine MRICS
Assistant Estates & Property Development Surveyor
Heidelberg Materials

Conservation Engineer

Jon Avent CEng, Bsc(Hons), MStructE, IHBC CARE Accredited Conservation Engineer
Director
Mann Williams

3.0 The Existing Property

- 3.1. The Stables are a Grade II* listed building, located in Groby, Leicestershire. Constructed in 1856 for George Harry Grey, the 7th Earl of Stamford, Master of the Quorn Hunt from 1856 to 1863, designed by M.J. Dain of Dain and Parsons in a Jacobean style. The Stables were designed to accompany the now demolished Bradgate House, which functioned as a hunting lodge.
- 3.2. The Stables originally included four accommodation blocks, a carriage house, five haylofts, a forge and shoeing box, three tack rooms, and a boiler house with a drying room. The Stables also include a courtyard tower with an alabaster panel displaying the Earl's coat of arms, the protection of the Tower is the primary focus of this application.
- 3.3. The Stables were listed in 1988 due to its special architectural and historic interest. It is important to note that the official listing schedule detailed that the Stables were in a ruinous condition at the time of listing. In 1998, Bradgate Stables were subsequently added to the Heritage at Risk Register due to its condition.
- 3.4. The wider estate including the Stables, was acquired by Redland Aggregates in prior to its listing, as the area considered to be nationally important mineral resource, with quarrying going back to at least the 1940's.
- 3.5. In 2003, the estate was acquired by Heidelberg Materials UK, to be incorporated into the Groby Quarry Landholding because of the extant mineral consent.
- 3.6. Since 2022, Heidelberg Materials UK have been undertaking repair works to Bradgate Stables in response to Urgent Work Notices served by Hinkley and Bosworth Borough Council. These repair works are ongoing under the guidance of Jon Avent, as part of a wider ongoing strategy of sensible and measured repairs.



Drone images showing the Stables before the commencement of the ongoing repairs.

4.0 Proposed Development

- 4.1. Following the construction of a scaffolding tower in 2024, a detailed inspection of the Timber Cupola was undertaken. This identified that the Timber Cupola has passed the point of viability for repair in situ and is now considered to represent a significant risk to the remainder of the Courtyard Tower. In order to mitigate against the risk and subsequent damage resulting from the collapse of the Cupola, the recommendation is that that the Cupola should be removed, and the Tower capped with a temporary flat roof.
- 4.2. The temporary flat roof provides the benefit of drying out the internal sections of the Tower improving its protection and allowing for access for the later removal of the decayed scaffolding currently present within the Tower.
- 4.3. Once removed the Cupola will be photographed and securely stored on site within an existing garage unit. The details of the garage are shown in the images in Schedule 3.
- 4.4. In advance of the works and in order to form part of this application, the Cupola has been recorded and measured via laser scanning survey, these results having already been made available to the Council. A secondary photographic schedule will be prepared once the Cupola has been removed.

4.5. For detail regarding the methodology of the recording, refer to Schedule 2.

4.6. In advance of the proposed works, in an email dated 16/01/2025, Jon Avent provided a high-level summary of this proposal for Paul Grundy to review. On 29/01/2025, after discussions with the Council's appointed Lead Advisor, it was confirmed that the Council were agreeable to the proposed works subject to submission of this Listed Building Consent Application. This exchange can be seen in Schedule 4.

5.0 Summary and Conclusion.

5.1. This application seeks approval for the removal and storage of the Timber Cupola from the Courtyard tower of Bradgate Stables. Following a detailed review in 2024, it was determined that the Cupola is beyond repair in situ and poses a structural risk.

5.2. The proposed removal and replacement with a temporary flat roof will mitigate the risk of collapse, protect the internal sections of the tower, and facilitate future maintenance. The Cupola will be documented, photographed, and stored on-site, with all records made available to the Council upon request.

5.3. This proposal is pursued in the best interests of the long-term conservation and preservation of Bradgate Stables. The Council has reviewed and conditionally agreed to this development, subject to the submission of this Listed Building Consent Application.

5.4. Approval is therefore sought to proceed with the proposed works to ensure the continued protection of Bradgate Stables.

Schedule 1: Structural Repairs Strategy/Methodology



Stables and Kennels to
Bradgate House,
Groby,
Leicestershire

**Structural Repairs Strategy to
South Range Tower
2025 Works Proposal**

Prepared by:-

Jon Avent

BSc(Hons) CEng MStructE, IHBC,
CARE Accredited Conservation Engineer

for



Project Number: 11769

Date: April 2025



Content/Quality Assurance

- 1.0 Introduction/Status Update
- 2.0 Works Strategy for South Tower

Appendices

- A. Location Plan
- B. Building Key Plan

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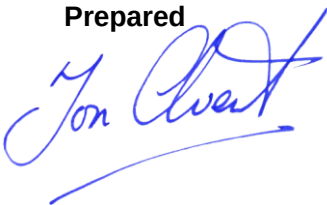
Issue Status

Draft 01

Distribution

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Checked

IB

Approved

JNA

Date

23rd April 2025

1.0 Introduction / Status Update

1.01 In October 2022 Mann Williams were instructed by Heidelberg Materials UK, The Ridge, Chipping Sodbury, Bristol, BS37 6AY to carry out a visual inspection and condition assessment of the roofless ruin known as the Stables and Kennels to Bradgate House with the objective of assisting with review of proposed enforcement action issued by the local authority. A report 11769-01 was issued.

1.02 The image below shows an aerial view of the Bradgate Kennels and Stables buildings taken from the south east. A location plan and site plan are provided in appendices A and B for reference.



1.03 Following completion and issue of the report a schedule of vegetation clearance works were actioned under direct instructions by Heidelberg Materials UK.

1.04 Mann Williams progressed dialogue with a specialist temporary works contractor, TRS Group, who developed designs for stabilisation of areas identified as priority and they have been retained for subsequent phases of works and required site access.

1.05 It is recognised that the building is in a ruinous state and was listed in a ruinous state. There is no current proposal to reinstate the site to its original format and objectives are currently focused on conserving the site while options for future use are explored.

1.06 Works have been ongoing in 2023 and 2024 to the west range and elevations/parapets to the tower on the south range. This document relates specifically to planned conservation works to the south tower proposed for 2025 and beyond.

1.07 Having progressed works during 2024 to consolidate masonry to areas of the south tower, access scaffolding enabled the existing timber dome/cupola to be inspected and assessed.

1.08 This inspection raised concerns in relation to the condition and stability of the timber structure and also to the safety of contractors working on the site. Extensive timber decay and partial collapse of some timber elements is considered to be creating a risk of local collapse along with wider risks to tower head masonry and persons accessing the site below the tower.

2.0 Tower Head – Timber Cupola

- 2.01 The timber cupola/dome structure is shown in the image below. No finishes remain and the timber skeletal frame is in a precarious and deteriorating state.



- 2.02 An iron capping frame sits on the top of the timber framing with supporting timber in various states of decay. The image illustrates a number of areas of timber failure or loss and concerns exist over the immediate stability. The ability to safely repair the existing timber framing insitu is considered impractical.
- 2.03 With the objective of continuing with the stabilisation, conservation and repair of the tower masonry it is considered an unacceptably high risk to contractors working around the tower and below this timber structure. In relation to any consideration of working within the tower this is most definitely an unacceptable risk.
- 2.04 With the carriageway into the central courtyard located below the tower there is also a risk present for any persons entering the courtyard via this route.
- 2.05 The presence of collapsing timber around the perimeter of the tower is also restricting the ability to progress masonry repairs and consolidation.

- 2.06 Within the tower head there is evidence of a modern steel frame added to prevent collapse of the timber cupola. The image below shows the steel frame with simple single bolt fixings securing the base of timbers where the bearings have historically decayed. Also visible in the image are several historical phases of scaffolding that are rusting and unsuitable for re-use. These areas require safe access to progress conservation works and this is impractical and unsafe with the high level timber dome in place and collapsing.



- 2.07 The image below shows the iron head to the cupola that is set precariously on the decaying timber framing. It's safe removal is considered essential to enable the general tower repairs to progress.



3.0 Works Strategy

- 3.01 To safely progress repairs to the tower it is concluded that the remains of the existing timber cupola/dome structure should be recorded and carefully dismantled. As a protected structure it is noted that a listed building consent would be required for these works and that the removal should include protection, retention and safe storage of recovered structure.
- 3.02 The recording of the structure is currently being progress by **CHRISTIANS – The Survey Company, Preston** and The link for the reality capture model from point cloud scan can be viewed at <https://digital-twins-data.co.uk/Bradgate%20Stables%20PC%203MX/App/#%2F>
- 3.03 Drawings will be produced to enable dismantled elements to be logged and tagged prior to safe, secure and dry on-site storage.
- 3.04 The approach to safe dismantling will be to use one, and at some stages two, mobile cranes sited externally to the south of the tower. One crane will have personnel basket for safe access above the structure and the second crane, when required will be used for lifting elements to ground level.
- 3.05 The use of temporary strapping and bracing will be adopted to ensure the structure can be safely dismantled without becoming unstable.
- 3.06 Regular record images will be taken during the works as elements of the structure are revealed.
- 3.07 With the timber cupola/dome dismantled, tagged and safely stored it would be proposed that the corroding and life-expired internal scaffolding is carefully removed, allowing future stages of work to have new birdcage scaffolding inserted to progress repairs with safe internal scaffolding access.
- 3.08 With the cupola/dome safely removed and stored, and the life-expired scaffolding removed internally it is proposed that the existing tower head level steels are used to support a simple timber deck with waterproof membrane and internal temporary drainage. This will be set below parapet level and will provide protection to internal areas of the tower and aid future repairs.

Appendices

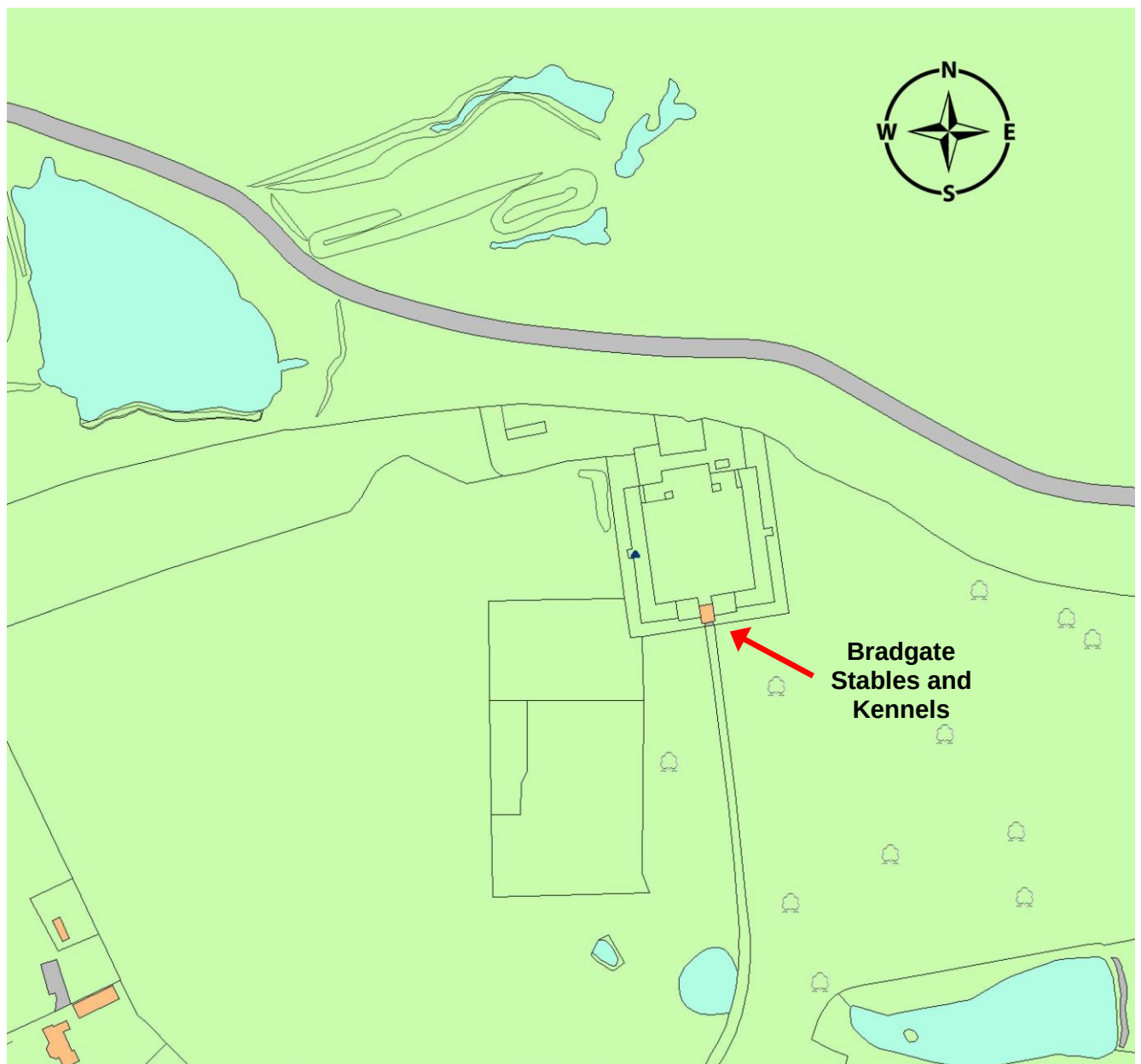
Appendices

- A. Location Plan
- B. Building Key Plan
- C. Review of Urgent Works Schedule

Appendix A

Location Plan

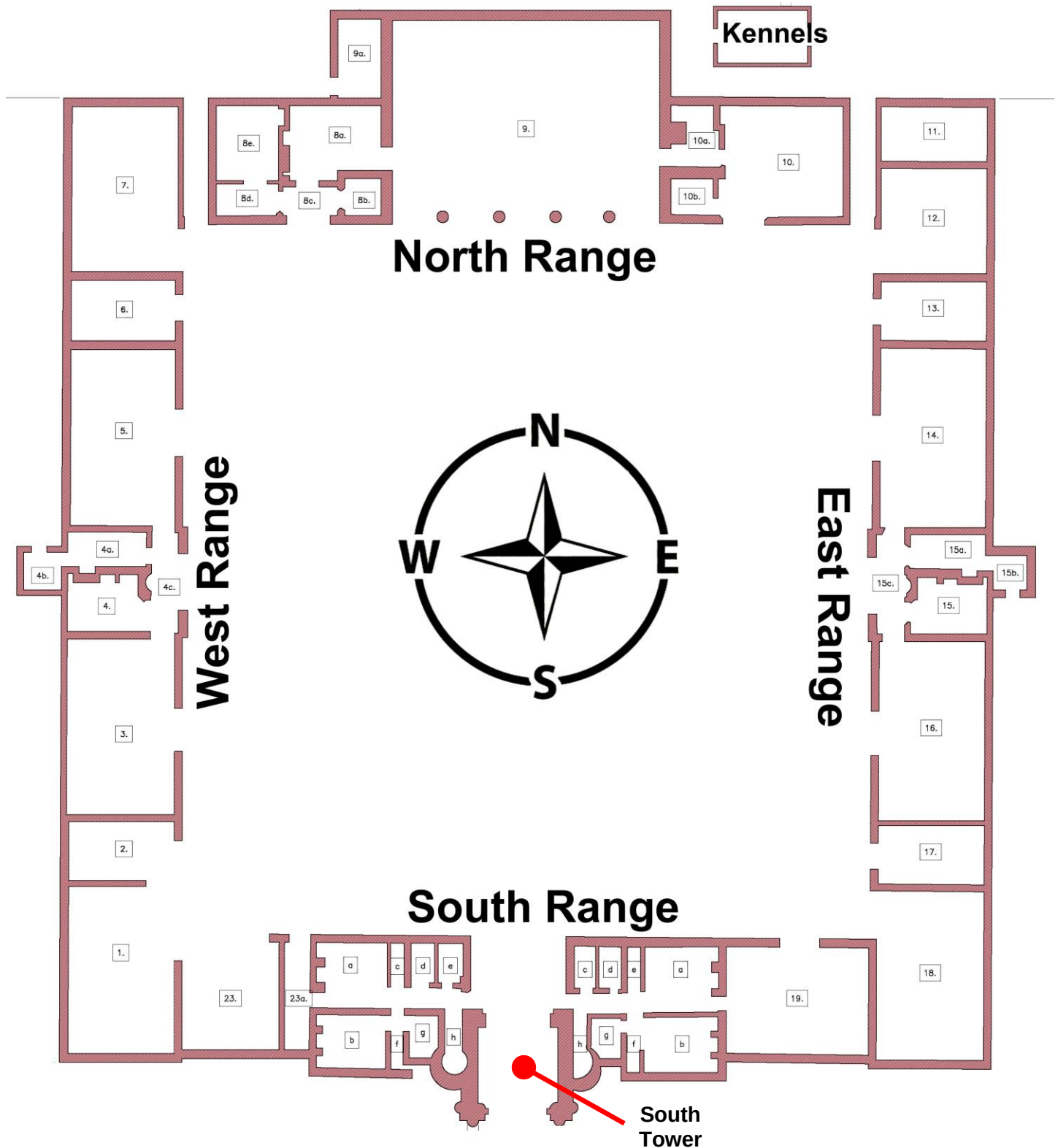
The following plan identifies the location of the Manor ruin in relation to nearby landmarks and other buildings.



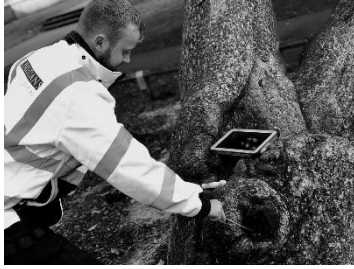
Appendix B

Building Key Plan

To aid the progression of repairs the following areas of the site have been defined as the following key plan.



Schedule 2: Methodology of Recording



CHRISTIANS



Preston (head office)

Manor Court, Salisbury Hall Road, Ribchester, PR3 3XR

+ 44 01254 790810

info@christiansltd.com

LASER SCANNING METHOD STATEMENT

2025.V2

Method Statement for Carrying Out a Laser Scanning Survey

1. Purpose

This method statement outlines the procedure for carrying out a laser scanning survey to capture highly accurate, three-dimensional data of the site or structure. The laser scanning survey will produce a detailed point cloud that can be used for design, analysis, and documentation purposes in the project.

2. Scope of Work

- The scope of work includes:
- Setup and calibration of laser scanning equipment.
- Scanning of the site or structure to capture detailed 3D data.
- Processing of point cloud data and preparation of 3D models or drawings.
- Reporting and delivery of survey results to the project team.

3. Survey Equipment

- 3D Laser Scanner: A terrestrial laser scanner (e.g., Leica, Faro, Trimble) to capture precise 3D coordinates of the site.
- Tripods/Targets: For stabilizing the laser scanner and setting control points.
- Data Collector/Tablets: For controlling the laser scanner and recording scan data.
- Reflective Targets: Used for aligning scan data and improving accuracy.
- Control Points: Known reference points used to register and align the scans.
- GPS or Total Station (if required): To establish control points or register scan data to georeferenced coordinates.

4. Personnel Involved

- Survey Manager: Responsible for overseeing the entire scanning operation, ensuring safety protocols are followed, and validating data quality.
- Laser Scanning Surveyor(s): Operates the scanning equipment, collects the scan data, and ensures the scan coverage is adequate for project needs.
- Safety Officer: Ensures compliance with safety regulations on-site.

5. Procedure

5.1 Pre-Survey Preparation

Site Assessment:

- Conduct a site visit to assess access points, identify potential hazards, and determine optimal scanner locations.
- Identify areas that may require multiple scans for complete coverage (e.g., hard-to-reach areas or obstacles).

Control Point Setup:

- If necessary, establish a coordinate system using GPS or total stations to define site boundaries and control points for aligning the scan data.
- Set up reflective targets at key locations to aid in aligning and registering scan data.

Health and Safety:

- Perform a site-specific risk assessment to identify any potential hazards (e.g., working near roads, construction areas, or in confined spaces).
- Ensure all personnel are equipped with appropriate personal protective equipment (PPE), including helmets, high-visibility vests, gloves, and safety footwear.

Equipment Setup and Calibration:

- Ensure the laser scanner is calibrated and ready for operation.
- Set up the laser scanner on a stable tripod or other support structures.
- Check the battery life, data storage capacity, and other equipment components before starting the survey.

5.2 Laser Scanning Process

Initial Scan Setup:

- Position the laser scanner at predetermined points on the site to capture a comprehensive dataset.
- Use the data collector/tablet to program and monitor the scanning process. Adjust the settings for resolution, scan range, and other parameters depending on the site conditions.

Data Collection:

- Perform multiple scans from different locations to capture all required aspects of the site or structure. Ensure that each scan overlaps with neighboring scans for data registration and alignment.
- Use reflective targets, if required, to improve the accuracy of the registration process.
- Monitor the scanner during the scan to ensure the system is operating correctly and that no data gaps are present.

Verification and Quality Control:

- Regularly check scan quality by reviewing preliminary data to ensure completeness and accuracy.
- If required, re-scan areas to fill any gaps or to improve data clarity.

Safety Considerations:

- Ensure the scanning operation is carried out in a safe manner, with proper signage and barriers around the scanning area to protect workers and bystanders.
- Avoid scanning during adverse weather conditions that could affect scan quality, such as heavy rain or high winds.
- Maintain clear communication with the survey team, especially when moving between scan positions or areas with limited visibility.

5.3 Post-Survey Activities

Data Transfer and Backup:

- Once the scanning is complete, transfer the scan data from the scanner to the data storage system for backup and further processing.
- Ensure that backup copies of the data are securely stored in separate locations.

Data Processing:

- Use specialized software (e.g., Leica Cyclone, Faro Scene, Autodesk ReCap) to process the point cloud data, register multiple scans, and create a unified 3D model.
- Check the data for accuracy, ensuring alignment between scans and verifying that all points are captured.

Quality Control and Verification:

- Cross-check the processed point cloud with known control points to verify the accuracy of the data.
- Make any necessary adjustments to the data, such as removing noise or correcting misalignments.

Reporting and Deliverables:

- Prepare a final survey report, including processed 3D point cloud data, models, and any relevant observations.
- Deliver the processed data in the required formats (e.g., .xyz, .e57, .rcp) to the client or project team.
- Provide any additional survey drawings or analysis as needed.

6. Safety Considerations

- Ensure the laser scanner is operated according to the manufacturer's guidelines to avoid potential eye hazards. Always use appropriate safety signage to warn individuals about laser hazards.
- Clearly mark scanning areas and ensure that unauthorized personnel do not enter the working zone.
- Follow standard operating procedures for equipment handling and avoid handling cables or components while the scanner is in operation.
- Provide communication devices (e.g., radios or phones) to survey teams for effective coordination during the survey.

7. Environmental Considerations

- Ensure minimal environmental disruption during the survey, especially in sensitive areas.
- Dispose of any waste materials (e.g., flagging tape, markers) in an environmentally responsible manner.
- Avoid scanning in weather conditions that could affect data quality or pose safety risks (e.g., fog, heavy rain, or extreme temperatures).

8. Conclusion

This method statement outlines the necessary steps for carrying out a safe and accurate laser scanning survey. By following these procedures, the survey team will capture high-quality 3D data that can be used for various applications, including design, analysis, and documentation.

Approved By:

Thomas Whitehead / Managing Director

03.03.2025

Schedule 3: Gallery



External View of Garage Unit



Locations of Bradgate Stables and Garage



Image of Timber Cupola



Courtyard Tower

Schedule 4: Redacted emails with Hinckley and Bosworth Borough Council.

 Jon N. Avent [redacted]
To:  paul.grundy@hinckley-bosworth.gov.uk
Cc:  [redacted]
 [redacted]

Thu 16/01/2025 21:06

Dear Paul
I trust you are well.
We have received confirmation from Heidelberg to progress plans for this years phase of urgent works.

By way of a brief update, the focus this year will be on the main tower and particularly the timber dome which is in a precarious state and prevents any safe working to lower areas of the tower.
The plan is to record and dismantle the timber structure, placing it into safe onsite storage.

This will enable the remains of the tower head to be stabilised and consolidated and to gain safe access into the tower to remove decayed scaffolding and look to improve access within the tower for subsequent repairs.

It would be proposed to form a simple flat roof temporary weathering deck at the head of the tower to aid drying out of the lower internal sections of the tower, thus improving protection and assisting plans for future repairs and protection works.

We are in the process of preparing a listed building application for the removal and storage of the timber dome, but would welcome any comments you may have on this.

In relation to works on the wider site it is the plan to carryout a sweep of the structures using MEWP where necessary, to identify any areas requiring immediate attention, although the main focus of works this year will be on the main tower/entrance area.

I trust this update assists.

Regards

Jon

Jon Avent
BSc(Hons) CEng MStructE IMBC CARE Accredited Conservation Engineer
Director
Mann Williams
Consulting Civil & Structural Engineers

 Paul Grundy <Paul.Grundy@hinckley-bosworth.gov.uk>
To:  Jon N. Avent
Cc: [redacted]
[redacted]

Wed 29/01/2025 13:47

Hello Jon,

Thank you for confirming Heidelberg's proposed plans for this year's phase of urgent works at the Stables.

The Council are agreeable to the proposed course of action for the removal and storage of the timber dome to the south tower to allow for the proposed works of stabilisation, consolidation and gaining improved access. The removal and storage of the timber dome would require listed building consent, and to accompany the listed building application the following details shall be required:

- A Statement of Justification for the Works
- A Methodology for the Works including the method of dismantling and removing of the dome, the method and level of recording (considering whether it would be beneficial to have a carpenter involved in the recording process), how and where it will be stored etc.

The Council and our Lead Advisor [redacted] would be happy to discuss the above requirements in advance of the submission of the application, such as providing a review of an outline of the documentation. The Council are also in the process of discussing if any reasonable conditions may be applied to any listed building consent, and we will revert to you on this as soon as possible.

It is noted that the south range beyond the tower, the east and north ranges are not specifically mentioned in the proposed phase of works, so please can it be confirmed if they fall within the scope if the proposed MEWP 'sweep' of the structures? In the opinion of the Council and the spirit of collaboration it is suggested that [redacted] is on site and joins you for the MEWP sweep so that the scope and urgency of any works be mutually agreed. Please could you confirm if you are agreeable to this suggestion?

Finally, please could provide an outline programme for the south tower work, the 'sweep', and any remaining urgent works?

The Council look forward to continuing discussions with you to address the urgent works at the site.

Many thanks,

Paul Grundy
Senior Planning Officer (Conservation and GIS)