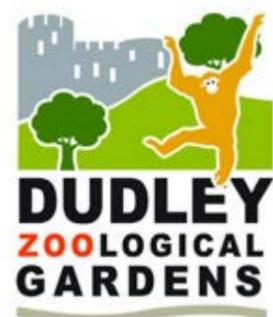


Castle Hill Vision Phase Two REVISION G

(This document covers the area of Dudley Zoological Gardens and the adjacent Castle Hill Woodland)

Dudley Zoological Gardens and Dudley Metropolitan Borough Council

May 2019



BPN ARCHITECTS



Issued

Revision	Date	By	Checked	Notes
-	26.10.2018	GH	DS	Initial Issue
A	21.11.2018	GH	DS	Revised Document, changes highlighted in yellow
B	30.11.2018	GH	GH	Revised Document, changes highlighted in orange
C	20.12.2018	GH	GH	Revised Document, highlighted removed and changes made following meeting on the 13.12.2018
D	16.01.2019	GH	DS	Revised Document, following comments from the zoo board and the client following meeting on the 09.01.2019
E	11.02.2019	GH	GH	Revised Document, following comments from the zoo board and the client, as per email on the 05.02.2019
F	08.05.2019	GH	GH	Revised Document, following comments from DMBC, as per email on the 29.03.2019
G	14.05.2019	GH	GH	Reference to BCLEP has been changed to WMCA/BCLEP throughout document

Prepared by BPN Architects
Name Georgina Holden
Job Title Architect
Date 26.10.2018

Contents

1.0 Introduction	3.0 Local Context	6.2 Concept	9.0 The Lodge	12.2 Proposal	15.2 Proposal
1.1 Executive Summary	3.1 Site Significance	6.2.1 Interventions	9.1 Existing	12.2.1 Concept	15.2.1 Option 1
1.2 Brief	3.1.1 Timeline Summary	6.3 Proposals	9.1.1 History	12.2.2 Floor Plans	15.2.2 Option 2
1.3 Background	3.1.2 Timeline	6.3.1 Tower Section	9.1.2 Location & Condition	12.2.3 Perspective	15.2.3 Costs
1.3.1 Phase 1	3.2 Attractions	6.3.2 Tower Floor Plans	9.1.3 Internal	12.2.4 Costs	15.2.4 Funding
1.3.2 Phase 2	3.3 Location	6.3.3 Future Expansion	9.1.4 Plans & Elevations	12.2.5 Funding	15.2.5 Project Specific Issues / Proposed Programme
1.4 Site	3.4 Local Planning Proposals	6.3.4 Archaeology	9.2 Proposal	12.2.6 Project Specific Issues / Proposed Programme	16.0 Woodland
1.5 Client Team & Contributors	3.5 Local Funding	6.3.5 Landscaping	9.2.1 Layout & Perspective	13.0 Discovery Centre (former Moat Cafe)	16.1 Existing
1.6 Design Team & Brief Experience	3.6 Masterplan	6.3.6 Costs	9.2.2 Costs	13.1 Existing	16.1.1 Outline Management Plan
2.0 National & Regional Context	4.0 Castle Hill Vision	6.3.7 Funding	9.2.3 Funding	13.1.1 Historic Information	16.1.2 History
2.1 National Context & Significance	4.1 Location	6.3.8 Project Specific Issues / Proposed Programme	9.2.4 Project Specific Issues / Proposed Programme	13.1.2 Location & Condition	16.1.3 Conservation & Condition
2.1.1 Castle Hill	4.2 Public Open Space & Canal Network	7.0 Visitor & Education Facility	10.0 Giraffe House	13.2 Proposal	16.2 Proposal
2.1.2 Zoos	4.3 Context	7.1 Introduction & Site Analysis	10.1 Existing	13.2.1 Concept	16.2.1 Introduction
2.1.3 Geology	4.3.1 Current Uses / Activities	7.2 Movement	10.1.1 Location & Condition	13.2.2 Floor Plans	16.2.2 Geopark
2.1.4 Castle	4.4 Connectivity & Adjacencies	7.2.1 Pedestrian Access	10.2 Proposal	13.2.3 Perspective	16.2.3 Access
2.1.5 Tectons	4.4.1 Surrounding attractions	7.3 Context	10.2.1 Precedents	13.2.4 Costs	16.2.4 Interpretation
2.1.6 Woodland	4.5 Opportunities	7.3.1 Proposed Site Location	10.2.2 Site Plan	13.2.5 Funding	16.2.5 High Ropes & Forrest Coaster
2.1.7 Attractions	4.6 Concept	7.4 Precedents	10.2.3 Section	13.2.6 Project Specific Issues / Proposed Programme	16.2.6 Platform
2.2 Architectural Significance	4.6.1 Existing Condition, proximities and adjacencies of attractions	7.5 Proposals	10.2.4 Sustainability	14.0 Elephant House	16.2.7 Management
2.2.1 Introduction	4.6.2 Proposed	7.5.1 Concepts	10.2.5 Costs	14.1 Existing	16.2.8 Costs
2.2.2 Tecton Structures	4.6.3 Proposed Projects	7.5.2 Floor Plans	10.2.6 Funding	14.1.1 Historic Information	16.2.9 Funding
2.2.3 Dudley Castle	5.0 The Projects	7.5.3 Perspective	10.2.7 Project Specific Issues / Proposed Programme	14.1.2 Location & Condition	16.2.10 Project Specific Issues / Proposed Programme
2.3 Policy	5.1 Introduction	7.5.4 Costs	11.0 Tectons	14.2 Proposal	17.0 South Gateway
2.3.1 Black Country Core Strategy	6.0 Castle	7.5.5 Funding	11.1 Introduction	14.2.1 Concept	17.1 Existing
2.3.2 Dudley Area Action Plan	6.1 Existing	7.5.6 Project Specific Issues / Proposed Programme	12.0 Queen Mary (former Castle Restaurant)	14.2.2 Floor Plans	17.1.1 Introduction
2.3.3 Castle Hill Conservation Area	6.1.1 Introduction	8.0 Stores Cavern Mine	12.1 Existing	14.2.3 Perspective	17.1.2 Current Condition
2.3.4 Black Country Strategic Economic Plan	6.1.2 Stage 1 Assessment	8.1 Existing	12.1.1 Historic Information	14.2.4 Costs	17.1.3 Precedents
2.4 Visitors	6.1.3 History	8.1.1 Introduction	12.1.2 Location & Condition	14.2.5 Funding	17.2 Proposal
2.5 Consultation Process & Stakeholder Involvement	6.1.4 Use	8.1.2 History	15.0 Tropical Bird House (former Parrot House)	14.2.6 Project Specific Issues / Proposed Programme	18.0 Conclusions
	6.1.5 Access	8.1.3 Access	15.1 Existing	18.1 Project Conclusion	18.2 Project Report Outcomes
	6.1.6 Previous Proposals	8.1.4 Conditions	15.1.1 Historic Information	18.3 Timeline	18.4 Funding
		8.2 Proposal	15.1.2 Location & Condition	18.5 Costs	
		8.2.1 Site Section			
		8.2.2 Mine			
		8.2.3 Costs			
		8.2.4 Funding			
		8.2.5 Project Specific Issues / Proposed Programme			

Intentionally Left Blank



1.0 Introduction

1.0 Introduction

1.1 Executive Summary

Vision

To bring the rich historical, archaeological, geological and zoological significance of the Castle Hill site to an increased number and wider demographic of visitors, placing it at the heart of wider developments, in an innovative and sustainable way.

Key Outcomes

The following outcomes will be achieved through investment in the existing assets and with the development of a new Visitor & Education Facility and attractions at Dudley Zoological Gardens, Castle Hill:

- Increase in the number of visitors to Castle Hill
- Increase appeal to and participation of wider demographic groups
- A tourism offer that meets current and future visitors' expectations and is sufficiently flexible to adapt
- A sustainable tourism offer that supports the delivery of the Castle Hill Vision, Phase 2
- Flexible space which maximises the potential of Castle Hill for training and education purposes
- Contextualises the heritage of the site within Castle Hill, the surrounding area and regionally
- Scope needs to be innovative, exemplary and economically and environmentally sustainable

Development and Master-planning

Dudley Zoological Gardens (DZG) in collaboration with Dudley Metropolitan Borough Council (DMBC), aims to deliver a programme of improvements and investments to Dudley Castle, Dudley Zoo and Castle Hill Woodland. In partnership with other key stakeholders we have developed a range of projects that reveal the significance of on-site heritage assets, whilst enhancing the tourism and leisure opportunities.

Dudley Castle: is a Grade 1 listed building and a Scheduled Ancient Monument (Refer to DIA report) It is the most extensive proposal and strives to achieve three key aims:-

Aim One - Develop the heritage experience:

The combination of zoo and castle within an urban setting, provides an opportunity to engage with and inspire a wider demographic than the majority of heritage sites typically attract. We aim to develop the heritage experience while creating a sustainable future for the Castle. Proposals include raised viewing platforms, soft and hard landscape treatments including vegetation removal to expose the structure

and open up views, wayfinding, interpretation booths, and a pavilion for use with events.

Aim Two - Conservation repairs:

A regime of inspections and surveys identified decay and deterioration in a number of areas, resulting in scaffolding and barriers being erected to safeguard visitors. In order to secure the long term future and use of the castle, repairs are required to consolidate the fabric of the structure, thus restoring visitor accessibility and safeguarding the heritage asset.

With assistance from the Local Authority's Conservation Officer and Historic England, we intend to apply for a 'Class Consent' which together with a Routine Maintenance Plan and Conservation Management Plan will streamline the consent regime. With the assistance of the Annual Revenue Contribution from DMBC, specialist trained DZG staff will undertake vital minor repairs at lower elevations such as repointing and the removal of vegetation, slowing down the rate of deterioration.

The condition survey commissioned in 2015 highlighted the need to embark on a wider repair programme to address deeper structural deficiencies in order to reopen areas currently inaccessible to the public and to prevent further areas requiring protection. This repair programme will span a number of years, as the scope of the work will be extensive, with priority afforded the areas of higher risk. Both the Triple and Northern gateways requiring consolidation to ensure they remain safely accessible.

Aim Three - Archaeology:

During the 1990's, three volumes of background information were published setting out a decade of excavations undertaken on site. We will progress this work further by preparing a 'Post-excavation assessment report' reflecting the current research agenda and giving better visitor access to the archaeological finds.

Visitor & Education Facility: this building will act as a hub for the Zoo by housing the reception to the Zoo and Castle. It will provide visitor information, interpretation and archaeological information and it could be the reception for activities, training / education, meetings and conferences.

Stores Cavern Mine: the former limestone mine underwent stabilisation work in the early 1990's with rock-bolts installed, while unstable areas were infilled

and walled up.

Reinstating the central tunnel extension would provide access to the mine from outside the Zoo offering educational benefits integrating it into the wider emerging Black Country Geopark trail, and complementing the wet limestone tunnels and coal mine experience of neighbouring attractions.

Several species of bats hibernate within the mine, and in order to set parameters for the design, a bat survey is ongoing.

The Lodge: The Lodge – repair the building structure and upgrade the internal facilities. The building and immediate surrounds will also be developed as an interactive conservation experience for visitors.

Giraffe House: the aim is to create a sustainable building with a low carbon footprint. Sinking the building into the hillside will not only diminish its visual impact on a sensitive site; it will significantly reduce energy usage, increase space within the enclosure and create flexibility for alternative uses. The buildings design will incorporate a renewable energy system to exploit the geological nature of the site and draw from fundamental sustainability principles including layout, solar gain, passive design, renewable energy sources, and finally by sourcing local and natural materials.

Tectons: these buildings are seen as one of the finest collections of early modernist structures in Britain. Changing zoological practices have left some of the buildings without a function and unused. Over the past 30 years, eight of the remaining twelve ferro-concrete constructed Tecton structures have been restored, while four still require repair, architectural reinstatement and an analysis of the future function:

Castle Restaurant (formerly known as Queen Mary): is a Grade 2 listed building which will retain its present function as a café. Seating capacity can be increased to the external spaces utilising a canopy at the rear, along with improvements to soft and hard landscaping along the front elevation.

Moat Café (formerly known as Discovery Centre): is a Grade 2 listed building currently being used for education/learning and in part as an animal store. The proposals are to partially reinstate the buildings original function by creating dining facilities which will

alleviate peak demand at the Queen Mary restaurant. The restoration of toilet facilities and inclusion of a Changing Places adult complex care facility will be a useful addition to the top of the site.

Elephant House: is a Grade 2 listed building that is being underutilised, housing birds of prey and providing general storage. This prominent building will be developed to create housing for the primate enclosure sited on the adjacent hillside providing access via new high-level mesh tunnels.

Tropical Bird House: is a Grade 2* listed building that has remained largely unused over the past few decades. Creating a digital immersive experience will educate visitors on conservation (animal and heritage), Castle history and the original function of the Tecton buildings, and will have minimal impact on the fabric of the building.

Castle Hill Woodland: sited within the Scheduled Ancient Monument, the woodland is designated as a Site of Importance for Nature Conservation (SINC). It forms the majority of the Castle Hill Conservation area; an important landscape that combines historical, archaeological, geological and ecological elements. The mature deciduous habitat contains ash, sycamore, and beech trees. The public have open access to the majority of the woodland; with a smaller area within the DZG boundary having restricted access.

The proposal includes improving pedestrian and cycle access, redefining site access points, along with interpretation and wayfinding signage. (Refer to LUC report)

Open access area: proposals seek to create a sustainable landscape, which respects and develops the historic, geological and ecological qualities of the site whilst enhancing the enjoyment, access and understanding of the site for visitors. Options for reversible commercial opportunities to fund the long-term maintenance and management of the woodland will also be explored.

Restricted access area: using discreet defined pathways, visitors will be given access to areas of the woodland for the first time and a counter lever balcony will be erected facing towards the largest mine within the woodland, Big Ben cavern. Out of hours events will enable the Zoo to promote local wildlife conservation, using existing wildlife assets including feral badger setts

and thriving bat populations.

South Gateway: options for improved connectivity between the Castle and Dudley town centre are assessed.

The following are also included for each of the projects:

RIBA Stage 1 Design Proposals
Costs to RIBA Stage 0/1
Identification of potential funding sources
Project specific issues to be addressed
Delivery programmes

Conclusion

These proposals define the significance of Castle Hill as a heritage asset that is central to the development of Dudley's tourism offer. The site has significant educational and leisure opportunities that complement adjacent sites. This cluster of businesses will enable Castle Hill to become a central feature for development and engagement of key projects and link future development with its significant heritage standing.

The Vision sets out why this site is important historically, how it can benefit from the development of these schemes and that it forms part of a wider development programme for Dudley borough.

1.0 Introduction

1.2 Brief

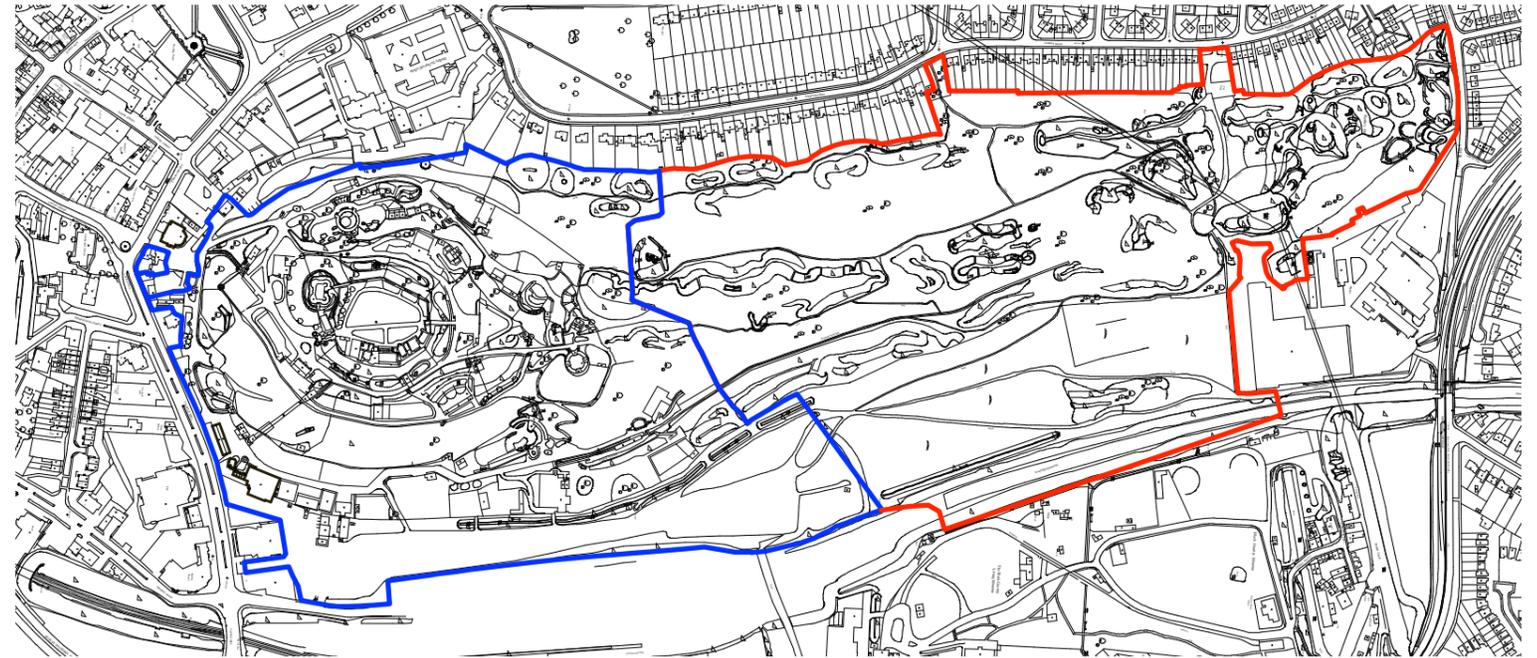
Dudley Zoological Gardens (DZG) in collaboration with Dudley Metropolitan Borough Council (DMBC) are seeking to deliver a programme of improvements and investments to Dudley Castle, Dudley Zoo and Castle Hill Woodland, all of which fall within the Castle Hill Conservation Area. In 2017 DZG successfully obtained funding from the Black Country Local Enterprise Council (BCLEP) to progress the proposals in order that a project development and master planning exercise could be undertaken. The aim of the project is to explore with key stakeholders the range of potential options available, allowing the client to better realise and reveal the significance of the on-site heritage assets whilst also enhancing the tourism and leisure opportunities for DZG. These developments will build upon the catalogue of already successfully delivered improvements and investments to-date by DZG. The proposals indicated within this document are a response to a brief provided by DZG and DMBC, the following 'Castle Hill Vision' document has been prepared which in summary includes five main areas of project development and master planning:

1. **Produce an overarching vision for all of the projects**
2. **Provide RIBA Stage 1 design proposals**
3. **Develop clarity on costs to RIBA Stage 0/1 for each of the projects**
4. **Identify potential funding sources for each project**
5. **Formulate a programme for delivery for all of the projects**

KEY

— Zoo Boundary

— Woodland Boundary (Publicly Accessible)



Outline of Castle Hill Woodland



Panoramic of Dudley Castle

1.0 Introduction

1.3 Background

1.3.1 Phase 1

In recent years, the DZG and DMBC have been successful in attracting funding from the private sector, Europe (ERDF), HLF and the WMCA/BCLEP. This funding has supported:

- Repair, renovation and interpretation of five of the zoo's twelve Lebetkin designed Tecton structures, including the Station Café, Bear Ravine, Kiosk, the Reptiliary and Main Entrance
- Upgrading DZG – this involved an upgraded and enhanced entrance, creation of a new exit point leading to Dudley High Street, improved signage and public realm within DZG and the refurbishment of the external appearance of a listed office building
- Development of new visitor welcoming arrangements – including new access road, secondary road, visitor hub and recreational route linking the attractions
- A new enhanced entrance to DZG from the car park
- New car park
- Repair and redecoration of the chairlift
- A programme of learning and participation events and activities
- A two year, apprentice based, training and repair programme

The above work formed part of what was the 'Castle Hill Vision' Phase 1 which was initiated in 2011. In March 2017 Dudley Council adopted an Area Action Plan (AAP) for Dudley Town Centre and this sets out the vision, objective and spatial strategy for future development in Dudley town centre, Castle Hill and its environs up to 2026.

Within the AAP there is a policy specifically for Castle Hill, Policy 23, which sets out the Council's commitment to seek to safeguard the special architectural, historical, archaeological, geological, ecological interest and open landscape of the Castle Hill Conservation area while promoting the development of the area as a visitor attraction.

Prepared in support of the Dudley AAP was the Dudley Urban Historic Landscape Characterisation (2015) and a Conservation Area Character Appraisal for Castle Hill (2015) and Dudley town centre (2015) which together provide an up-to-date assessment of the character and appearance of the Castle Hill Conservation Area.

The above documents have been used to assist with the formulation of the Castle Hill 'Phase 2' proposals contained within this document.



Station Cafe



Kiosk



Bear Ravine



Entrance



Proposals for the scheme include

- 1 A major new visitor entrance at Dudley Zoological Gardens as well as new entrances to the Black Country Living Museum and Dudley Canal Trust
- 2 One shared arrival point for visitors accessed by a new traffic signal controlled junction off Tipton Road
- 3 To upgrade existing car park to accommodate 600 new spaces which meet modern standards, including disabled parking bays and zoned areas for busy periods
- 4 A new 'piazza' at the entrance to Dudley Zoological Gardens
- 5 The creation of a secondary road primarily for coaches to drop off and collect day visitors
- 6 A brand new visitor hub providing key information, audio visual displays, a central display cabinet and seating area
- 7 A new recreational route for pedestrians and cyclists with the aim in the future to provide a transport link which will move between all three visitor attractions
- 8 New pedestrian routes
- 9 New picnic and relaxation area

1.0 Introduction

1.3 Background

1.3.2 Phase 2

DMBC have proposed that within the conservation area they will safeguard and seek to enhance the special architectural, historical, archaeological, geological, ecological interest and open landscape of the Castle Hill Conservation Area while promoting the development of the area as a visitor attraction by:-

- Ensuring the significance of Dudley Castle (Scheduled Ancient Monument), including its setting, is not prejudiced and the key views into and out of the Castle Hill Conservation Area are preserved and enhanced
- Encouraging the enhancement of the existing major tourist attractions such as Dudley Castle, Dudley Canal and Tunnel Trust, Black Country Living Museum, quarried limestone exposures, and the Tecton Buildings and Zoo in a way that respects the highly sensitive character and setting of the Conservation Area
- Encouraging the conservation and enhancement of the Castle Hill Woodlands this includes; developing their potential to be a visitor attraction by supporting improved access to paths and wildlife corridors across the hill, footpath signage, interpretation and management of the Castle Hill Woodland and limestone ravines and the associated 'mineral railway' paths
- Encouraging reconnection of Castle Hill with Dudley Town Centre via Castle Street in a way that will preserve and enhance the character and appearance of both Conservation Areas and reveal the significance of their shared history
- Encouraging provision of enhanced access to the Sharrington Range and gatehouse within the Castle in order that the historical and architectural significance of the Castle ruins can be sustained and appreciated and to develop their value as a tourist attraction
- Encouraging the continuation of the repair and architectural reinstatement works to the Tecton buildings and their sympathetic reuse
- Ensuring the protection of the geological and manmade historic resources such as the Limestone Caverns and encouraging proposals that would enhance these features as visitor attractions whilst respecting their historic, scenic, geological and nature conservation value and setting within the Conservation Area

Text extracted from the Dudley Town Centre Area Action Plan

Wider Context

Dudley Metropolitan Borough Council and a variety of outside private sector bodies are currently developing a wide range of regeneration projects to continue with the redevelopment and transformation of Castle Hill and the Dudley Town Centre:

- Midland Metro Extension from Wednesbury to Brierley Hill
- Very Light Rail National Innovation Centre
- Institute of Transformational Technologies (IOTT)
- Dudley Interchange (Metro and bus station)
- Avenbury Portersfield (Cavendish House and Town Centre regeneration project)
- St Thomas and St Luke's Church (Top Church) regeneration
- New Dudley Leisure Centre
- LCP, Churchill Precinct
- Black Country Living Museum undertaking their 'Forging Ahead Project'
- 'Driverless Vehicle' transportation system linking visitor attractions, college facilities and the town centre



Castle Hill

DZG annually publish their strategic vision called the DZG Masterplan this document provides goals and aspirations for the zoological gardens, the programme of future projects outlined within this document are key to this vision.

'Following the successful completion of DZG's element of the first phase of the Castle Hill Vision, we remain committed to increasing visitor numbers, helping to revitalise the area through the creation of an economically sustainable tourism and leisure cluster. This in turn will aid job creation for local people, support the local community and improve the overall performance of the area.'

Extract taken from DZG Masterplan

Images of Phase 2 Projects

1.0 Introduction

1.4 The Site

The Castle Hill Conservation Area was first designated in February 1975 in recognition of it being an area of ‘special architectural and historic interest the character and appearance of which it was considered desirable to preserve and enhance’. It is primarily an area of open space and woodland stretching north-south and is located upon a large outcrop of much wenlock limestone formation strata deposited in the Silurian period some 428 to 429 million years ago. The hill is a prominent geomorphological feature and icon of Dudley and the borough. In 1925 Castle Hill, including the Castle, was transferred by the Earl of Dudley to Dudley Council.

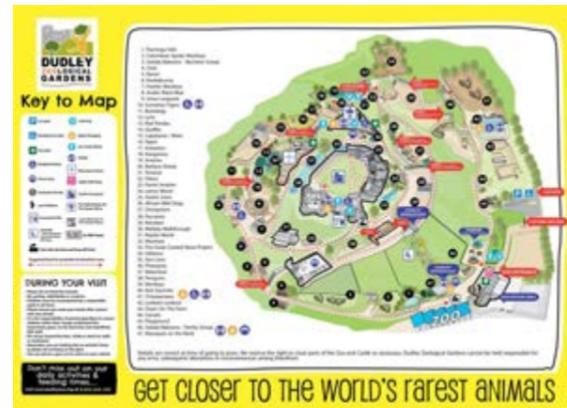
The imposing ruins and earthworks of the medieval Castle dominates the southern end of the hill which is surrounded by the landscape and buildings of Dudley Zoological Gardens (DZG) which contains the listed collection of early 20th century Zoo buildings by the Tecton Partnership. The north of Castle Hill is dense woodland which contains rock face exposures and ravines, and providing a potentially valuable recreational resource as well as evidence of the Earl of Dudley’s network of carriage drives developed over the earlier mineral railways associated with the late 18th century limestone workings. It is the starting point for the borough’s ‘Limestone Way’ which starts at Castle Hill and runs to Wren’s Nest National Nature Reserve and Sedgley Beacon. It is also where Dudley Canal & Tunnel Trust provides access to the 18th century canal system which runs under Castle Hill via canal narrow boats to 80,000 visitors per year.

The geological interest of Castle Hill is internationally renowned and there is a unique legacy of a well-preserved limestone quarrying landscape of national significance, designated a Scheduled Ancient Monument in 2004. It displays evidence of both surface and underground limestone working with associated canals, limekilns, caverns and other structures dating from the late medieval period throughout the Industrial Revolution until the modern era, accordingly the area is of strategic importance to the Black County Geopark proposals whilst also being a Site of Importance for Nature

Conservation (SINC).

Dudley Zoological Gardens (DZG) was founded in 1935 on a site covering approximately 40 acres. The Zoo was opened to the public on the 6th May 1937, followed by the official launch on the Bank Holiday Monday of the 18th May.

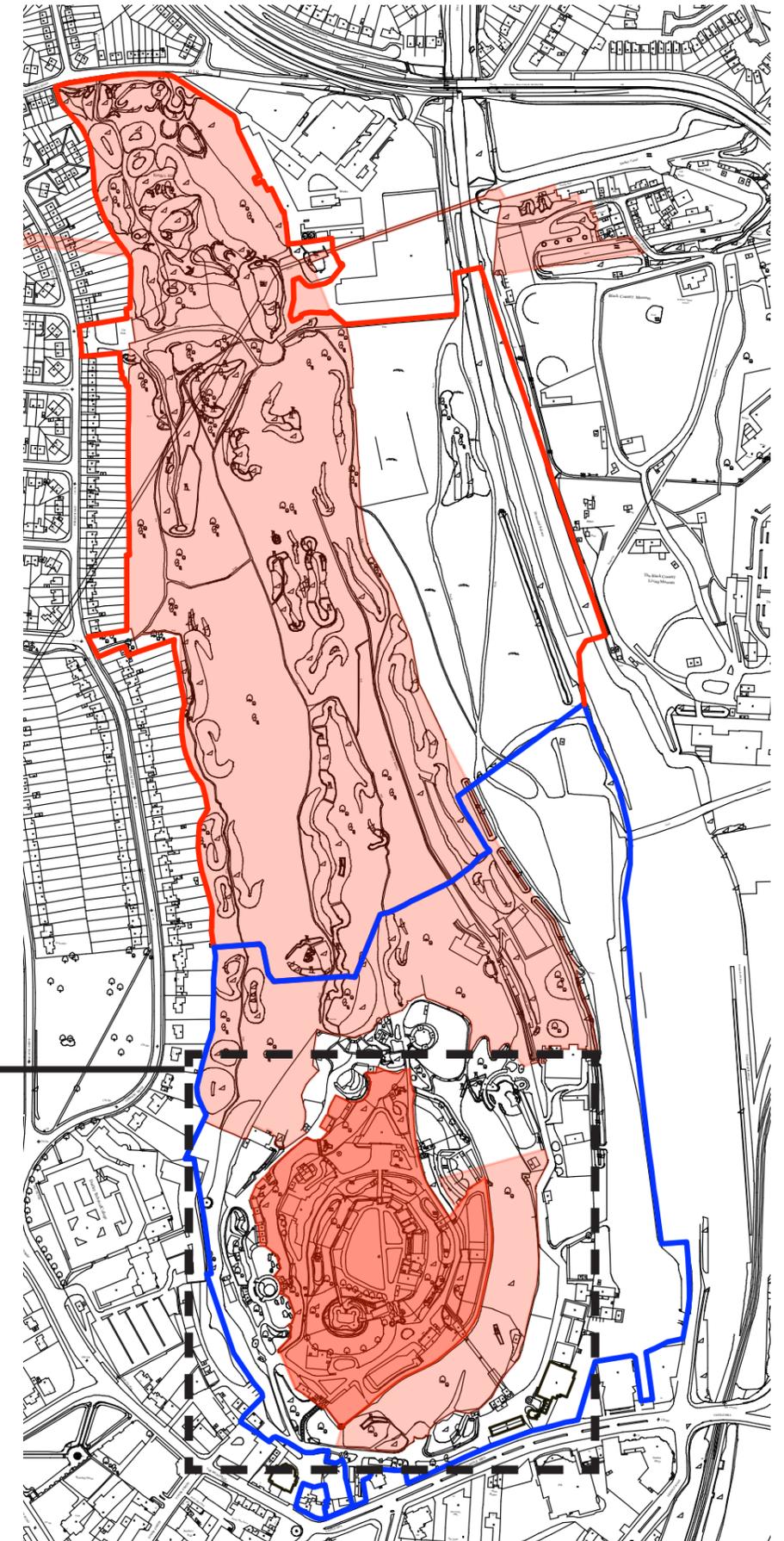
Included within the lease to DZG is Dudley Castle (Grade I listed and a Scheduled Monument), the 12 Tecton Structures (Grade II* and Grade II), the Castle Mill Lodge (Grade II) and Stores Cavern Mine which falls within Limestone working remains Scheduled Monument. Dudley and West Midlands Zoological Society became a charity in 1978 with the aim to inspire and excite people in the natural world, in the history and geology of the site on Castle Hill and to encourage and promote support and a better understanding of wildlife and nature conservation. The strength of Dudley Zoo as a visitor attraction is due to the large variety of experiences available on site. This combination of heritage assets, exotic wildlife and unique site transportation attracts over 300,000 visitors annually and generates funds for day to day operation and capital development.



DZG Map



Scheduled Ancient Monument status across Castle Hill, indicating the Castle and limestone remains outline.



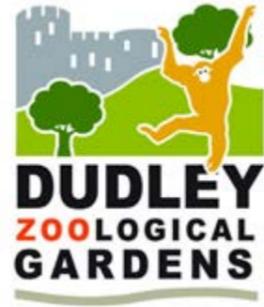
Outline of Castle Hill Woodland

KEY

- Zoo Boundary
- Woodland Boundary (Publicly Accessible)
- Scheduled Ancient Monument - Castle
- Scheduled Ancient Monuments - Limestone remains

1.0 Introduction

1.5 Client Team & Contributors



David Sparks OBE
DZG Board Chairperson
Dudley Zoological Gardens

Stephen Wollard
Project Development
Sub Group Chairperson

Derek Grove
Zoo Director

Matthew Lewis
Zoo Manager



Helen Martin
Chief Officer for Regeneration & Enterprise
Dudley Metropolitan Borough Council

Paul Mountford
Head of Planning & Regeneration

Liz Dickinson
Design and Delivery
Manager

David Keeley
Countryside Manager

Jayne Pilkington
Senior Conservation
Officer

Sheila Ray
External Funding and
Compliance Monitoring
Officer



Nick Carter
Assistant Inspector of Ancient Monuments
Historic England

Sarah Lewis
Principal Adviser, Heritage
at Risk Team

Peter Boland
Historic Places Adviser



Bill Kirk
Chief Executive
New Heritage Regeneration

Dawn Nicholls
Development Manager (Funding)



Graham Griffiths
Chair
Friends of Dudley Castle

Wolverhampton
Archaeology Group

Clive Westwood

Wolverhampton Archaeology Group



Stewart Towe CBE DL
Chairman
Black Country LEP

Sarah Middleton
Chief Executive
Black Country Consortium

1.0 Introduction

1.6 Design Team & Brief Experience

ARCHITECT
BPN Architects

CONSERVATION CONSULTANT
Donald Insall Associates

QUANTITY SURVEYORS
PMP Consultants

BPN ARCHITECTS

BPN Architects was founded in 1996. The three directors brought together a team who enjoy working on projects that define our towns and cities, adding to the vitality and diversity of a place.

Our approach to designing buildings and spaces is people-led, working alongside clients, residents, end-users, artists, local authorities and other consultants to create better places.

BPN have previously been involved with Dudley Zoological Gardens in 2011 - 2015 when they were appointed to restore and repair some of the Tecton structures. Funding was provided by HLF for the refurbishment with a season of learning and participation events involving a two year, apprentice-based training and repair programme enabling the Zoo to repair other Tecton structures using its own maintenance team.

Following the completed refurbishment of the Tecton structures (a HLF funded project) 2016 saw the restoration of two more of the 1930's listed structures.

Donald Insall Associates

Donald Insall Associates is an internationally leading conservation architecture practice with 60 years' experience in the care, repair and adaptation of historic buildings and places, together with the design of new buildings for sensitive sites. They have pioneered an approach to conservation as a catalyst for regeneration and renewal, and continue to put it into practice at a range of scales in locations across the UK and around the world.

Donald Insall have extensive experience of producing Conservation Area Appraisals, Management Plans and Building Assessments for clients including the Crown Estate, Grosvenor Estates, Portman Estates and Cadogan Estates, as well as properties owned by the National Trust, English Heritage and private owners. Recent historic building surveys and reports include; Condition Surveys for the Palace of Westminster, Kew Palace, Royal Hospital Chelsea and Trinity College, Cambridge.

pmp consultants

PMP is a dynamic, client-focused business. Three decades of front-line experience ensures a clear, direct approach in presenting, consultation and collaboration on all projects with a commitment to achieve client goals.

Martin Rowe has extensive experience in delivering refurb, heritage and listed building projects. Along with the expected keys skills of a senior quantity surveying professional, Martin is a binder of professional teams, bringing his experience, character and soft people skills to energise and bring along the team in the Clients best interests.

PMP have had prior experience of Dudley Zoological Gardens, working alongside BPN Architects on the restoration of listed Tecton Buildings.

LANDSCAPE ARCHITECTS
Land Use Consultants



Founded in 1966, LUC is an independent environmental design, planning and management consultancy, employing over 120 committed and experienced professional staff at offices in London, Glasgow, Edinburgh, Bristol and Manchester, with an additional office presence at Lancaster University Environment Centre. LUC provides expert and integrated advice on planning, environmental assessment, landscape design, urban regeneration, ecology, the historic environment and graphics & visualisation.

In addition, LUC has considerable experience of preparing strategies and management plans to guide the conservation, enhancement and stewardship of landscapes. These plans are frequently prepared for green spaces which are rich in features of natural and cultural heritage importance and where these values need to be conserved against a desire to promote public access and recreation.

BUSINESS PLANNING & FUNDING
L & R Consulting LLP



Established in 1969, L&R Consulting works exclusively in the tourism, cultural heritage and regeneration sectors, providing clients throughout the UK and internationally with independent professional advice and business support.

Director Peter Middleton, who has worked with L&R for more than 30 years, specialises in providing strategic advice to cultural and heritage attractions and venue and tourism destinations. He works with clients on practical business planning to improve their performance and makes funding applications for capital and programme development.

Peter has extensive experience of heritage-related regeneration, heritage, museums and visitor attraction projects. He works with organisations at Board and CEO level as adviser, mentor and appraiser. His track record of advice on complex heritage and cultural projects includes:

- Project Adviser to Dudley Zoological Gardens on its Tecton repair project.
- Peter advised DMBC on the future of its glass heritage in Stourbridge, acting as project leader for a series of studies that led to the establishment of the Museum of Glass at White House Cone.
- He has advised Birmingham Botanical Gardens on its masterplan and on investment strategy, including LEP and HLF funding options.

STRUCTURAL ENGINEERS
Stand Consulting Engineers



Stand Consulting Engineers was formed in 2007 to provide creative structural engineering expertise on new and historic buildings. Its Director, Stuart Tappin, has 30 years of conservation experience in the UK and overseas with three major engineering practices; Alan Baxter and Associates, Oscar Faber and Cameron Taylor. We have a deep understanding of the special issues relating to historic buildings, scheduled monuments, museums and galleries and buildings within conservation areas. We believe that a successful project comes from working as part of a team and aim to show that engineers can make a positive contribution at all stages of the project.

Stand Consulting Engineers were appointed for the restoration of the animal enclosures and other structures at Dudley Zoological Gardens. The Heritage Lottery Funded project between 2013 and 2015 included the restoration of the entrance with its curved reinforced concrete roofs and the Bear Ravine using traditional concrete and modern materials.

Intentionally Left Blank



2.0 National & Regional Context

Intentionally Left Blank

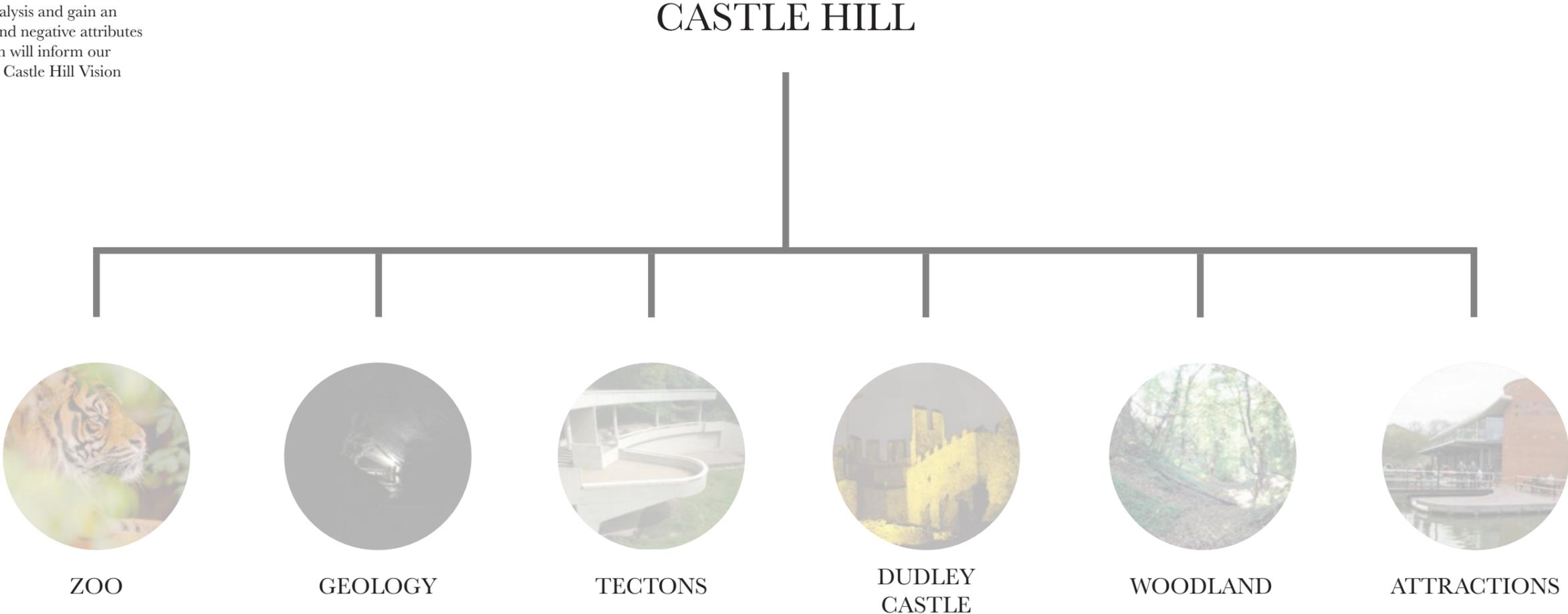


2.0 National & Regional Context

2.1 National Context & Significance

2.1.1 Castle Hill

Within the national context Castle Hill contains a unique mix of attractions, including a Zoo, Caverns, Woodland and heritage buildings. To emphasise the exclusive opportunity at Castle Hill we have summarised and analysed exemplar attractions across the UK in comparison to those at Castle Hill, allowing us to critically analysis and gain an understanding of the positive and negative attributes of each sector. This information will inform our decisions for each aspect of the Castle Hill Vision project.



2.0 National & Regional Context

2.1 National Context & Significance

2.1.2 Zoos

Within an hour and a half drive from Dudley are three zoos:

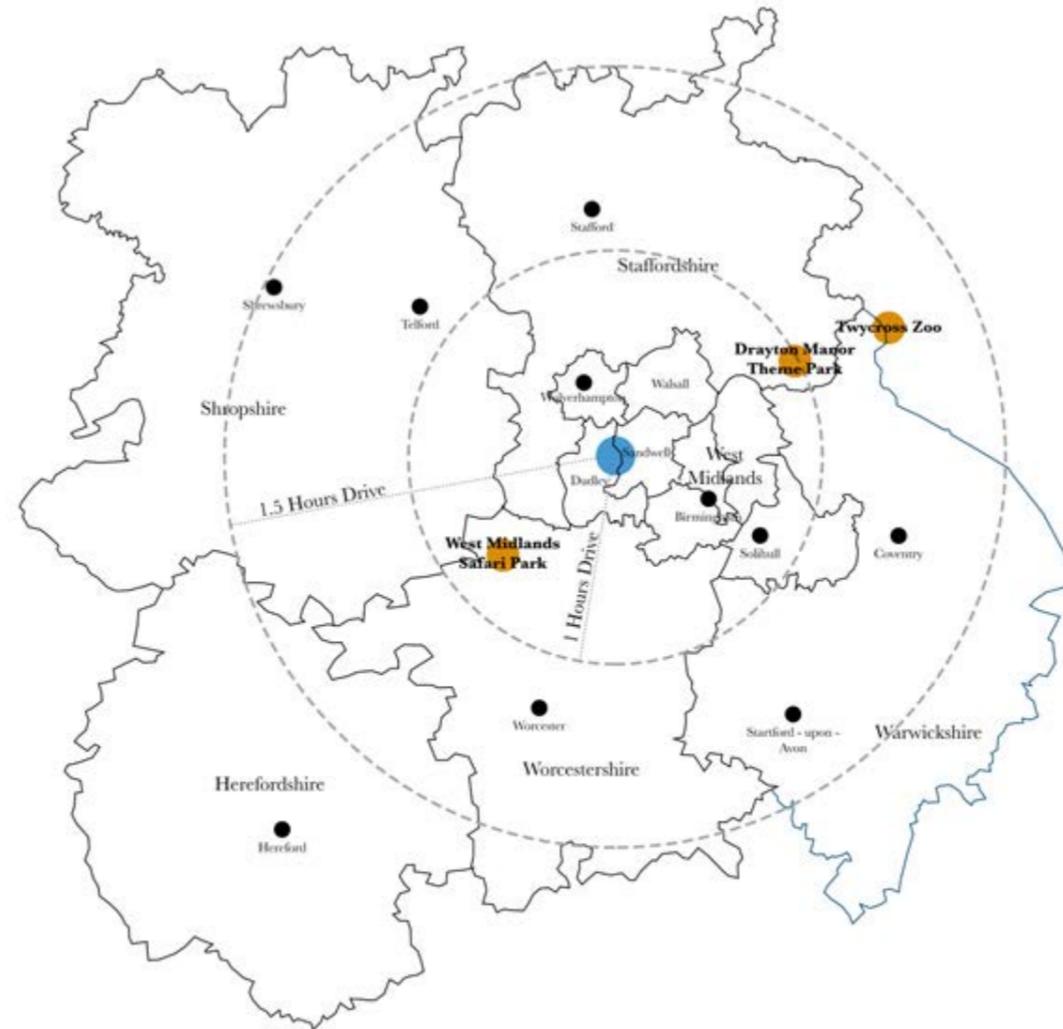
- **Drayton Manor Zoo**, which is part of a theme park over 15 acres, caring for 100 animals
- **Twycross Zoo** is known as a specialist primate zoo and currently cares for 500 animals. They have recently completed four immersive animal enclosures: African Plains, Wild Asia, Carnivores and Elephant Valley
- **West Midlands Safari Park** is both a drive thru and walk thru zoo with an additional Go Ape attraction within its local forests

These attractions offer certain advantages that our urban site will never be able to compete with; mainly the availability of additional areas of land to develop how they wish. DZG does not have the option to significantly expand and planning restrictions considerably limit the options for development. However, it must be noted that Castle Hill holds huge potential, set within a large conurbation, in a location that offers alternative transport links both on and off the Zoo, on a site that contains a variety of distinctive heritage assets that can never be available to our local competitors.

In comparison to the majority of historic zoos, DZG membership is very low. Both Bristol and London Zoos are very much historic city zoos, though both their sites provided a range of activities within a few minutes of the entrance which enables members to pop in for a shorter visit, rather than having to commit to a full day experience. Unfortunately the topography of our site, layout of our routes and the location of the majority of attractions on site are located on the upper levels of the hill which makes it difficult for members to just enjoy a shorter stay.

In order to attract new members, our Masterplan has identified a range of attractions for visitors to attend at the base of the site within a few hundred meters walk of the entrance. Several years ago we started to develop the base of the Zoo as a short stay destination and over the next few years we aim to provide a variety of additional attractions to create a full two hour experience. This will enable members to use the site for a few hours or spend the whole day visiting the entire site.

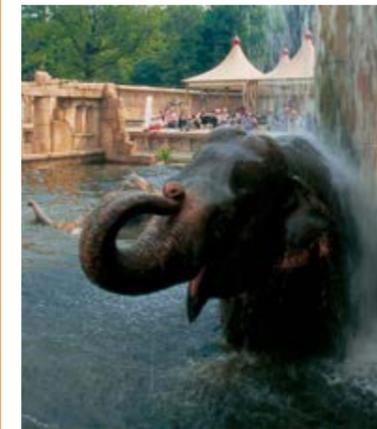
Text provided by DZG



KEY

- Zoos
- City / Town Centres
- Dudley Zoological Gardens

Locations of Zoos within a 1.5hr drive of Dudley



Enclosures at Chester Zoo

Case Study

Chester Zoo is an exemplar project in the context of UK Zoos. In 2015 Chester Zoo debuted a £40m islands development, it replicated a series of Indonesian islands by Dan Pearlman. The expansion allows visitors to journey through Indonesia putting the spotlight on species including endangered animals.

Zoos are now entering an age of cultural landscape immersion in which the environment is sculpted to the natural environment of the animal. Hannover Zoo is at the forefront of this movement, providing not only an immersive experience for the animal but also for the visitors.

Positives

- Represents a positive force for wildlife conservation; in an era of rapid declines and extinctions of our planet's rich biodiversity.
- Create an immersive setting that provides a natural environment for the animals and a unique experience for the visitor.
- Afford a personal connection with wildlife and through effective educational programmes, direct this emotional response towards a conservation goal.

Negatives

- Even a well-designed enclosure habitat, will not recreate the complex environment that animals encounter in the wild.
- Watching animals living comfortably in natural habitats can detract from the plight of declining wild populations.

2.0 National & Regional Context

2.1 National Context & Significance

2.1.3 Geology

Geoparks are a exemplar collection of geological significant sites around the world, all of which are internationally important. The Black Country is a place where coral seas, steamy swamps, scorching deserts, icy wastelands, mines and furnaces created unique and wonderful landscapes over 430 million years of geological time.

The area was once a blanket of mining and industry due to the incredible wealth of minerals just beneath its surface and through the labours of the ingenious people who used them.

Between 1600 and the 1960s intensive heavy industry covered most of the area and earned this region international recognition as ‘The Workshop of the World’, where anything could be designed and made.

This industrialisation saw much of the landscape turn from traditional green fields to a blackened and smouldering wilderness which was ‘black by day and red by night’ due to the coal mining wastes, furnace slag heaps, the perpetual pall of smoke and the glow of the furnaces at night – and so the ‘Black Country’ was born.

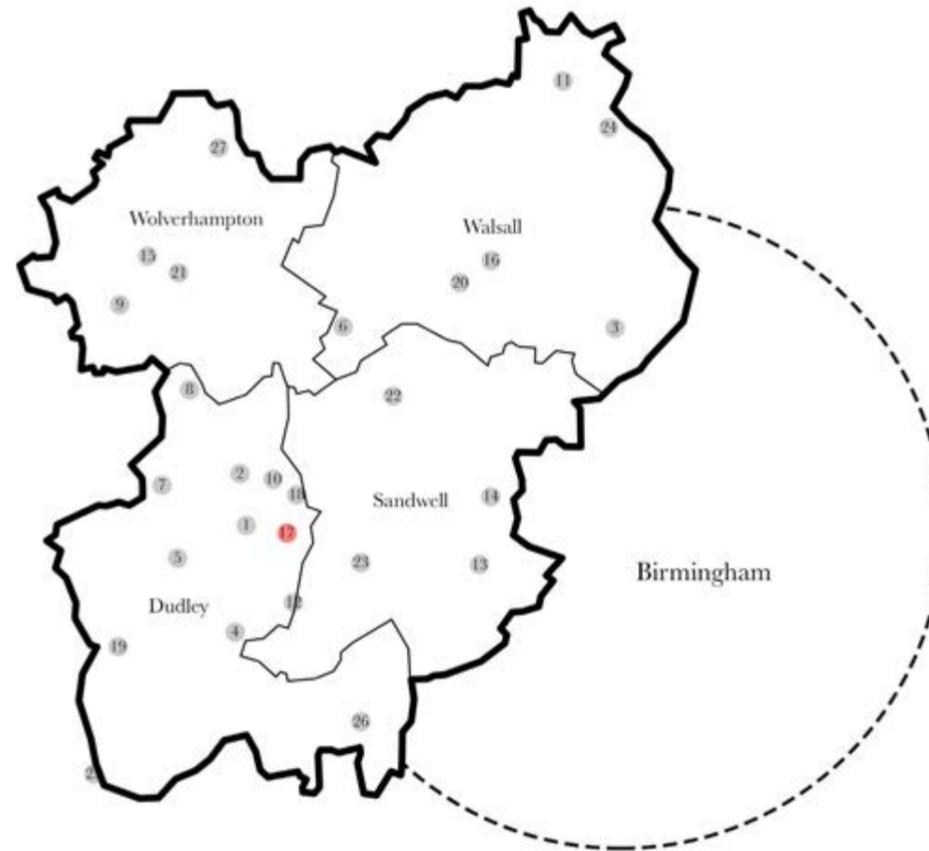
Today it is an amazing place to explore with many ‘hidden gems’ of world class natural and manmade wonders to be found and explored. These are classed as the individual geosites such as Wren’s Nest National Nature Reserve within the aspiring Black Country Global Geopark.

Text taken from the Black Country Geopark Leaflet

There are currently 45 Geosites across the Black Country of which a concentration sit within the Castle Hill site. This concentration is made up of the following sites:

- Geopark headquarters housed within the Dudley Museum and Archive
- Singing Cavern
- Dudley Canal & Tunnel Trust
- Black Country Living Museum
- Wrens Nest National Nature Reserve and
- Castle Hill and Zoo.

These attractions are all within walking distance of the Castle Hill site. The limestone workings lie under Dudley Castle and the Woodland. The intention is to add to the geosites and open up further access to the Caverns beneath the Castle adding to the story of this geological rich area.



KEY 45 GEOSITES

- | | |
|--|---|
| 1 Dudley Museum and Dudley Town Geotrail | 24 Shire Oak Quarry Local Nature Reserve |
| 2 Wrens Nest National Nature Reserve | 25 Norton Covert |
| 3 Barr Beacon and Pinfold Lane Quarry | 26 Leasowes Park, Halesowen |
| 4 Saltwells Local Nature Reserve | 27 Northcote Farm, Wolverhampton |
| 5 Barrow Hill and Tansey Green Clay Pit | 28 Hay Head Quarry |
| 6 Moorcroft Wood Local Nature Reserve | 29 Daw End Railway Cutting and Linley Wood |
| 7 Cotwall End Valley Local Nature Reserve | 30 Ketley Quarry |
| 8 Sedgley Beacon Hill and Quarries | 31 Bromsgrove Road Cutting |
| 9 Bantock House Museum | 32 Wychbury Hill |
| 10 Singing Cavern and Dudley Canal Tunnels | 33 Park Lime Pits Local Nature Reserve |
| 11 Brownhills Mining Heritage Monuments | 34 Wightwick Wedge and Smestow Valley |
| 12 Bumble Hole and Warrens Hall | 35 Barnford Hill Park |
| 13 Galton Valley | 36 Buckpool and The Lays Local Nature Reserve |
| 14 Sandwell Valley Country Park | 37 Compton to Tetterhall Ridge |
| 15 West Park Wolverhampton | 38 Coseley Canal Cutting and Tunnel |
| 16 Walsall Arboretum | 39 The Rowley Hills |
| 17 Castle Hill and Zoo | 40 Coombswood Valley |
| 18 Black Country Living Museum | 41 The Gorge Sedgley |
| 19 Red House Glass Cone and the Crystal Mile | 42 Hayes Cutting Lye |
| 20 Walsall Geotrail, Museums and Art Gallery | 43 Stafford Road Cutting |
| 21 Wolverhampton Geotrail, Museums and Galleries | 44 Holloway Street Quarry |
| 22 Wednesbury Geotrail, Museums and Galleries | 45 Stourbridge Old Town Gasworks |
| 23 Blue Rock Quarry | |

Locations of Geoparks within the Black Country, see website for location map of all geosites
<https://www.dudley.gov.uk/residents/environment/countryside-in-dudley/nature-reserves/wrens-nest-national-nature-reserve/black-country-geopark/>



Case Study

Bradgate Park has a combined history of geology and aristocracy. Bradgate house and deer park originally belonged to Sir John Grey of Groby and his wife Elizabeth Woodville, (c. 1437 -1492) who after Sir John's death married Edward IV and was the mother of the Princes in the Tower. It is also possibly the birth place of the “Nine day Queen” Lady Jane Grey (c. 1537 - 1554). This park has a unique geological history that was formed millions of year ago and is still present in the formations within the park. Geology walks are held regularly and various archaeological digs are performed by De Monfort University. Bradgate Park has been listed as a Site of Special Scientific Interest (SSSI)

Positives

- Its geological and historic past allows for investment stimulation
- Natural resource provides an educational resource
- Collaboration with local universities provides a program of events and research

Negatives

- A seasonal attraction
- Difficult to generate enough income to cover operational costs

2.0 National & Regional Context

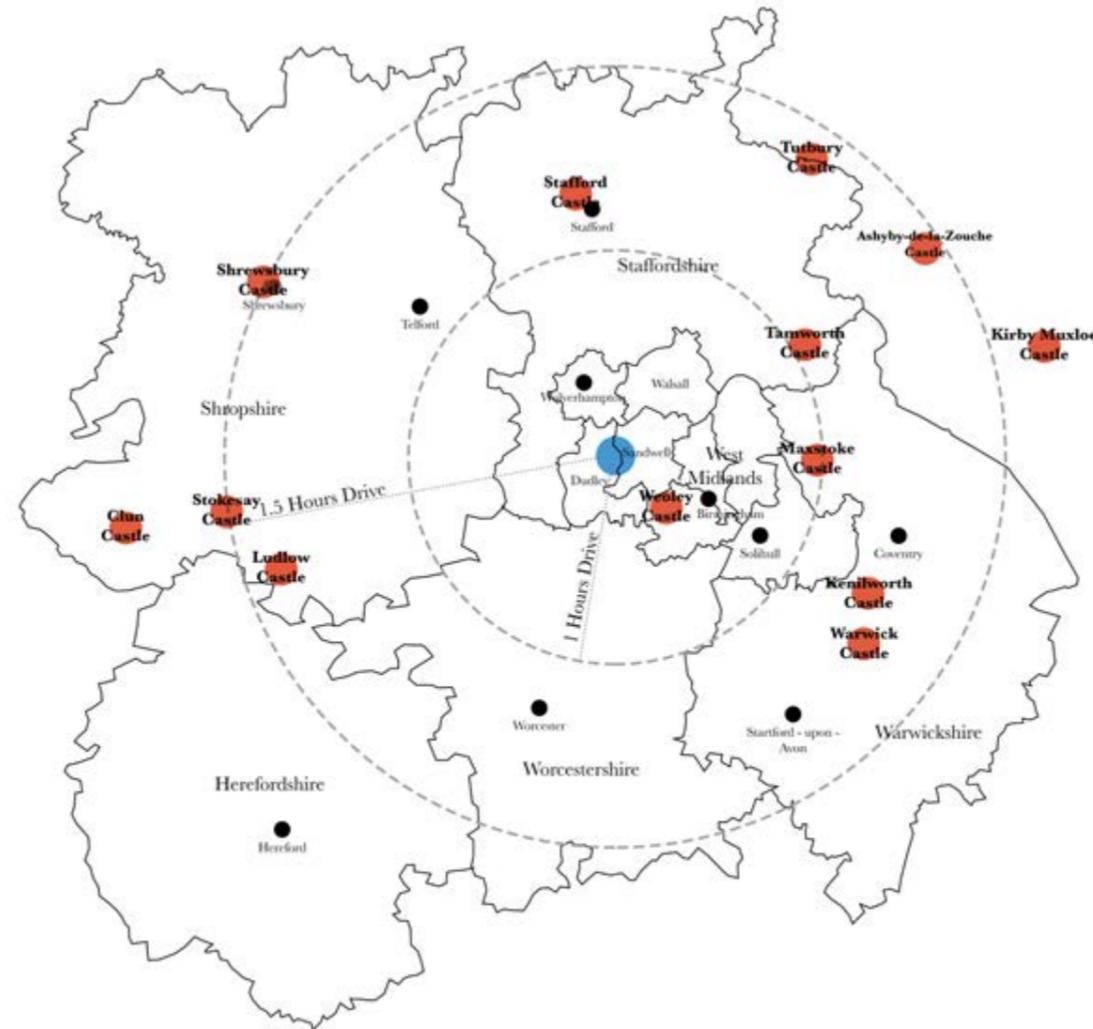
2.1 National Context & Significance

2.1.4 Castles

The diagram indicates that there are 11 Castles located within a 1.5 hour drive of Dudley. This information combined with the visitor figures indicated within this document demonstrates that Dudley Castle is the second most visited castle within the region, with only Warwick Castle welcoming more visitors.

The ownership of each Castle within the region varies as indicated below:

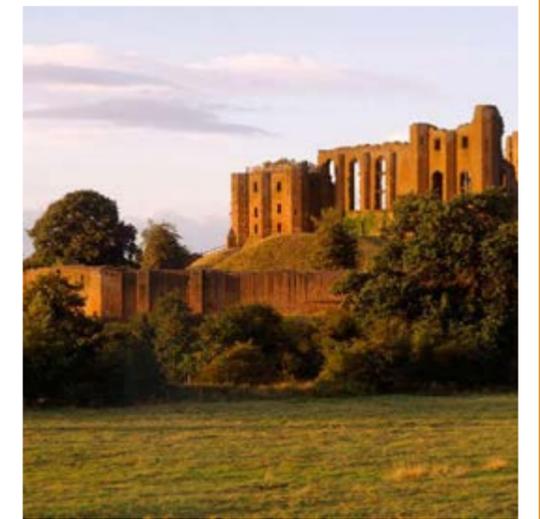
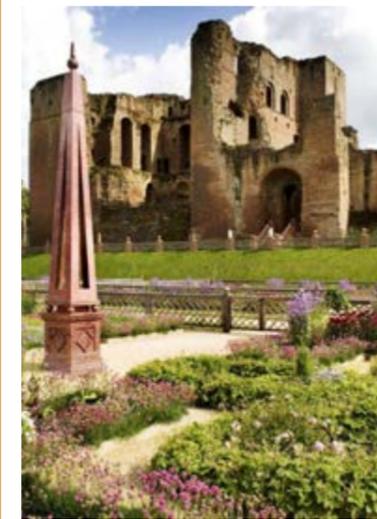
- Warwick Castle is owned by a Blackstone Group, an asset management company
- Stafford, Shrewsbury, Tamworth are owned by Councils
- Ludlow, Maxstoke and Tutbury by Earls, Estates and Families
- Weoley and Warwick by private companies
- Kenilworth, Ashby and Stokesay are owned and controlled by Historic England.



KEY

- Castles
- City / Town Centres
- Dudley Zoological Gardens

Locations of Castles within a 1.5hr drive of Dudley



Case Study

Kenilworth is one of England's most magnificent Castles. First built in the 1120s and a Royal Castle for most of its history, it was expanded by King John, John of Gaunt and Henry V. In 1563 Elizabeth I granted it to Robert Dudley, Earl of Leicester, who converted Kenilworth into a lavish palace. The Castle's fortifications were dismantled in 1650, and the ruins later became famous thanks in part to Walter Scott's 1821 romance Kenilworth. Kenilworth Castle was granted Grade 2* listing in 1986.

Positives

- English Heritage asset with the ability and in-house expertise to access considerable sums of external funding
- English Heritage asset, visit as part of the membership rather than a one off cost
- The castle has well established immersive experiences and an impressive setting.

Negatives

- English Heritage have had to invest considerable resources into building up positive relationships with the residents of the town centre
- Attracts one visitor category due to its historic nature

2.0 National & Regional Context

2.1 National Context & Significance

2.1.5 Tectons



Case Study

The Tectons are unique collection of buildings to Dudley, the only other examples of a Tecton is within Zoological Society of London (London Zoo and Whipsnade Zoo). This enclosure has been refurbished however the penguins have since been removed. This Grade I listed structure has been retained but no longer functions as a penguin pool. A new use has not yet been proposed for this structure.

Positives

- Provides a reminder of the zoos culture and complexity
- Provides future generations with an insight into architectural history

Negatives

- The attractions are of an architectural nature, attracting a certain demographic
- No longer fit for purpose

2.1.6 Woodland



Case Study

Puzzlewood is an iconic woodland situated in the Forest of Dean. The fourteen acre ancient woodland is a maze of pathways winding through the gulleys of mossy rocks. Within this maze of woodland are lookouts, bridges, mazes, play areas and a cafe. This unique woodland has been used for filming such productions as Doctor Who, Star Wars and Merlin. The gulleys formed within the woodland are similar to the structure found within Castle Hill Woodland.

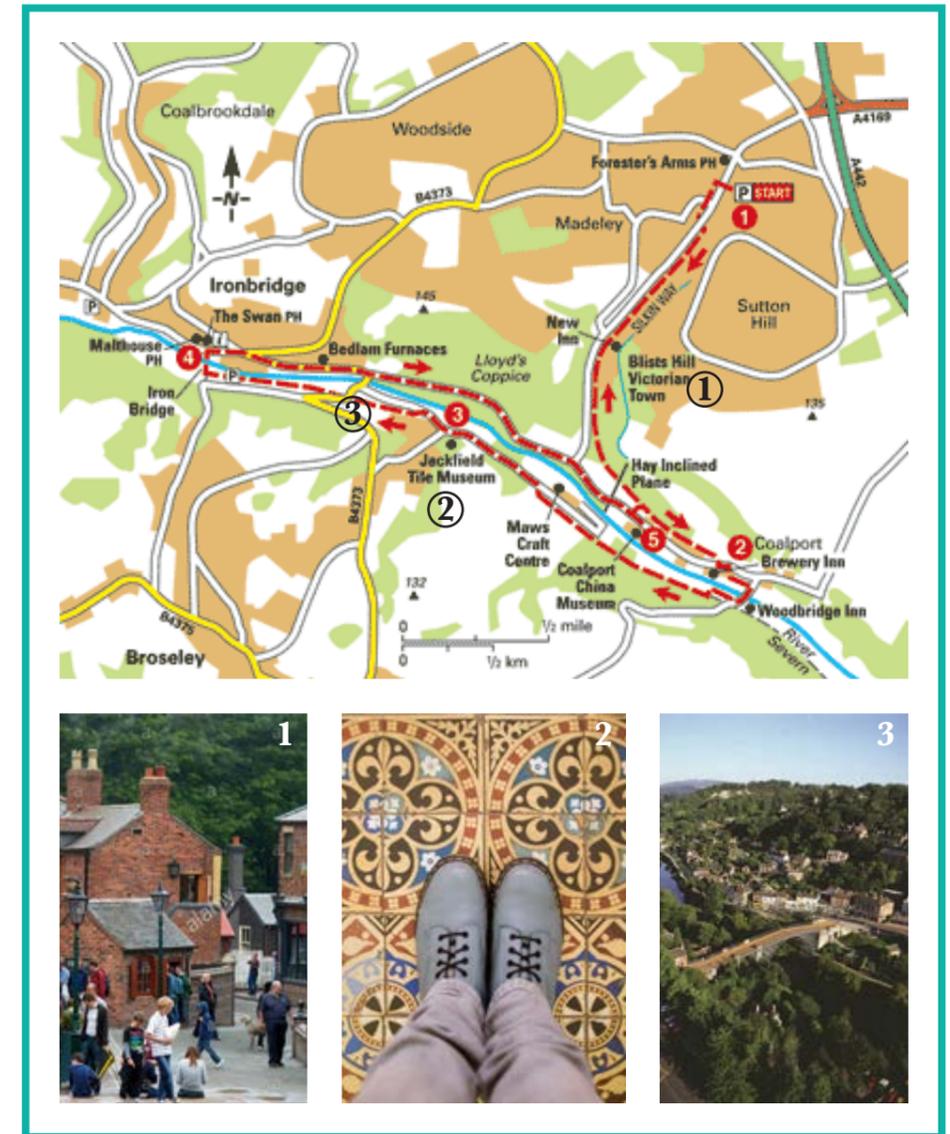
Positives

- Improve public health of the visitors
- Improves mental well being
- Woodland additions diversify the experience

Negatives

- Requires constant management
- Difficult to generate enough income to cover operational costs

2.1.7 Attractions



Case Study

Ironbridge Gorge is an internationally important heritage area that combines industrial and cultural heritage to tell the story of the gorge and its deep association with the growth and development of the Industrial Revolution. A cluster of important heritage features link together as parts of a wider heritage tourism package that attracts hundreds of thousands of people to the area each year to see and experience this story. The cluster of attractions plays a vital role in the area's economy and acts as a focus for local pride for this part of Shropshire.

Positives

- Huge economic impact on the local area
- Provides a wide set of creative educational, research and industrial archaeology opportunities
- Provides a positive Iconic image for the area and a focus for local pride.

Negatives

- There is a seasonal effect on the economy and influences from the schools calendar
- This area is predominantly rural and its infrastructure is limited.

2.0 National & Regional Context

2.2 Architectural Significance

2.2.1 Introduction

Dudley Zoological Gardens contains a number of listed structures that contribute to the architectural significance of Castle Hill. The buildings illustrate the historic and modern development of the area through their built form.

The Tecton Structures are a collection of buildings that are of national significance, illustrating the embodiment of the modern style, through their use of innovative materials and an unusual philosophy towards the presentation of the zoological collection

2.2.2 Tecton Structures

The Tectons are regularly visited by organisations from across the world including; the Black Country and Telford Group, the Twentieth Century Society, the Association for Study in the Conservation of Historic Buildings, International Scientific Committee on Twentieth Century Society and the World Monuments Fund. Below are extracts from Historic England and the Twentieth Century Society explaining the history and significance of these structures.

Historic England

Text taken from Historic England, 2015

Dudley Zoological Gardens (DZG) is now home to some of the rarest animals in the world. Lying within a conservation area incorporating the 11th century Dudley Castle, the Zoo has the world's largest collection of iconic internationally significant Tecton buildings. It is the only collection of interrelated Tecton designs in Britain and one of few remaining throughout Europe.

Inspired by the Russian Architect, Berthold Lubetkin who came to live and work in London in 1931, founding the group Tecton. Architectural modernism is associated with analysis of the functions of buildings, the use of modern materials, clean lines and the stripping away of all ornament.

Twentieth Century Society,

January 2004, Text by Ben Flatman

Tecton and Berthold Lubetkin (1901-1990)'s roles in the history of British modernism have long been recognised, yet not all of their work receives the attention that it deserves. Dudley Zoo (1935-37) is one such work, a neglected monument of national significance. The Tecton practice's zoo buildings at London, Dudley and Whipsnade introduced modernism to a mass audience and attained a degree of popularity and face-to-face exposure that other Architects could only have dreamed of. The twelve surviving pavilions at Dudley are more than worthy of comparison with their better-known London precursor, London Zoo's Penguin Pool (1933-34), and represent a unique collection of works by an early modernist practice on one site.

The picture when the Zoo opened in the winter of 1937 would have been somewhat different. Assuming they had beaten the throng of thousands to gain entry, a visitor arriving on that first day would have found the thirteen original pavilions loosely scattered within the pristine setting of the Castle mound. Dudley allowed Tecton many of the freedoms of a student project and working closely with Ove Arup, they continued to explore their fascination with the structural and sculptural potential of concrete. Tecton designed the enclosures in such a way as to emphasise the steep inclines and densely wooded slopes. They clearly relished the dramatic potential that the site provided but also respected its natural beauty and calm. Using the existing roads and pathways to stitch the buildings into their context, Tecton created an overall composition reminiscent of an English landscape garden, but they were also clearly conscious of the urban implications of what they were doing. Just as some had seen the London Penguin Pool as a prototype of a futuristic house, so Dudley can be interpreted as a blueprint for an entire city. As the put it, the new Zoo would be: "at once a scientific centre and an example of an ultra-modern town plan."

Berthold Lubetkin once said: **"I have the unfashionable conviction that the proper concern of architecture is more than self-display. It is a thesis, a declaration, a statement of the social aims of the age."** Encapsulated in the playful pavilions at Dudley is a call to remember the higher calling of all architecture, embracing not just material needs but also the desire to inspire and delight. Dudley Zoo did not change the world but it does stand as a monument to a vision of an alternative modernism. As with much of Tecton's work, it seems to anticipate a more relaxed and joyful approach to form and function. It is not the dour, one-size-fits all architecture that came to epitomise so much of post-war Britain, but rather a unique, three-dimensional manifesto, written in concrete, for an enjoyable and humane urban future.



Image of Dudley Zoo in 1937, the original entrance structure in construction

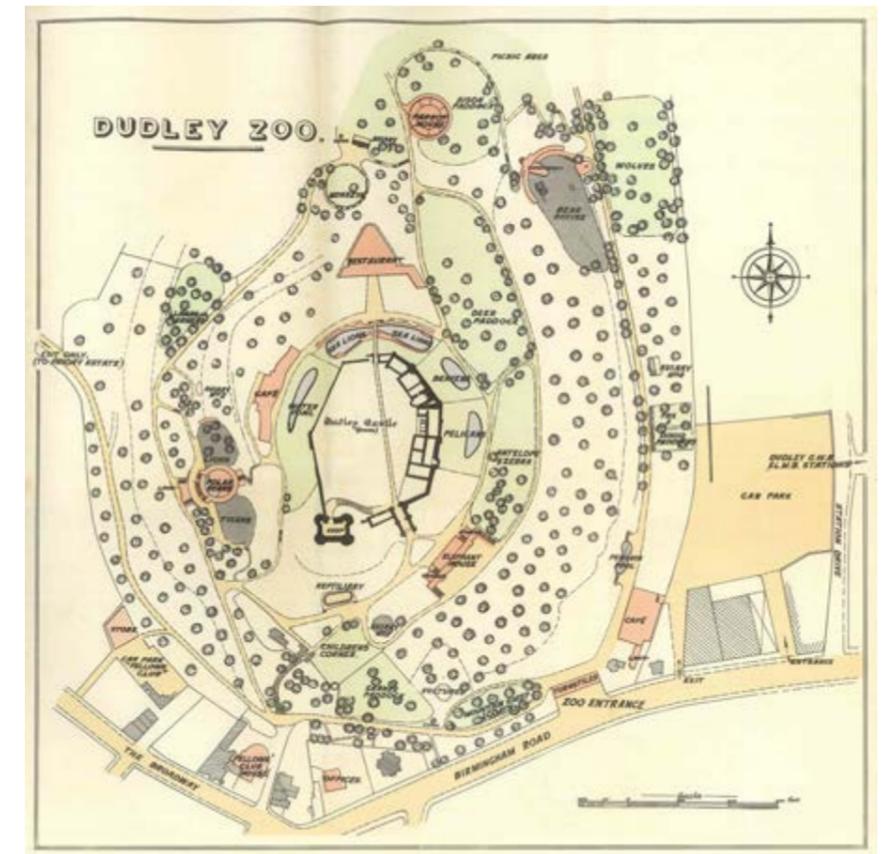


Illustration of the original layout of Dudley Zoo

2.0 National & Regional Context

2.2 Architectural Significance

2.2.3 Dudley Castle

Castle Hill is of national architectural and archaeological significance. The Castle is Grade I listed and classed as a Scheduled Ancient Monument, it was first listed on the 8th of February 1915 and became part of the Castle Hill Conservation Area in February 1975 in recognition of it being an area of 'special architectural and historic interest the character and appearance of which it was considered desirable to preserve and enhance'.

Each publication we have read has highlighted the significance of both the historic nature of the Castle and the archaeology that has been undertaken, these subjects are recurring themes throughout supporting documents and publications.

Conservation Area Character Appraisal

States the following:

Dudley Castle is the most visible symbol of Dudley's medieval origin as the heart of a great baronial estate. The well-preserved Castle remains document the later medieval and Tudor period development of the Castle as both a military structure and a display of wealth and aristocratic authority. Associated buildings provide evidence of the use of the Castle area as the focus of the Earl of Dudley's estate administration into the 19th century.

The Castle is featured in various publications, previously completed archaeological excavations have uncovered the Castles history. The Castle has a long an varied history which is heavily documented on the Historic England website.

Historic England

Historic England website states the following:

Dudley Castle survives well and is a good example of a motte and bailey castle which was remodelled in stone in the mid-12th and early 14th centuries. The

quality of the surviving remains has been enhanced by excavation which indicated that the Castle retains important structural and artefactual evidence relating to both its early history, and to the 16th century structural improvements which converted it from a defensive Castle into a high status domestic residence.

The following publications are outlined on Historic England's website relating to Dudley Castle, many of these publications relate to extensive excavations undertaken in the late 1980s, early 1990s:

- CBA **Archaeology in Britain**, (1984), 98-100
- Boland, P, **Dudley Castle Archaeological Project - Summary of Excavations**, (1985), 20-24
- Cocroft, WD, **Dudley Castle Archaeological Project- A Summary of Excavation**, (1985), 20
- Linnane, SJ, **Dudley Castle Archaeological Project - A Summary of Excavation**, (1985), 31-32
- Simpson, W D, **'Archaeological Journal' in The Castles of Dudley and Ashby-de-la-Zouch**, , Vol. 95, (1940), 142-158
- Simpson, W D, **'Archaeological Journal' in Dudley Castle : The Renaissance Buildings**, , Vol. 101, (1944), 101
- Youngs, S M, **'Medieval Archaeology' in Dudley Castle**, , Vol. 32, (1988), 286

Dudley Castle Archaeological Project

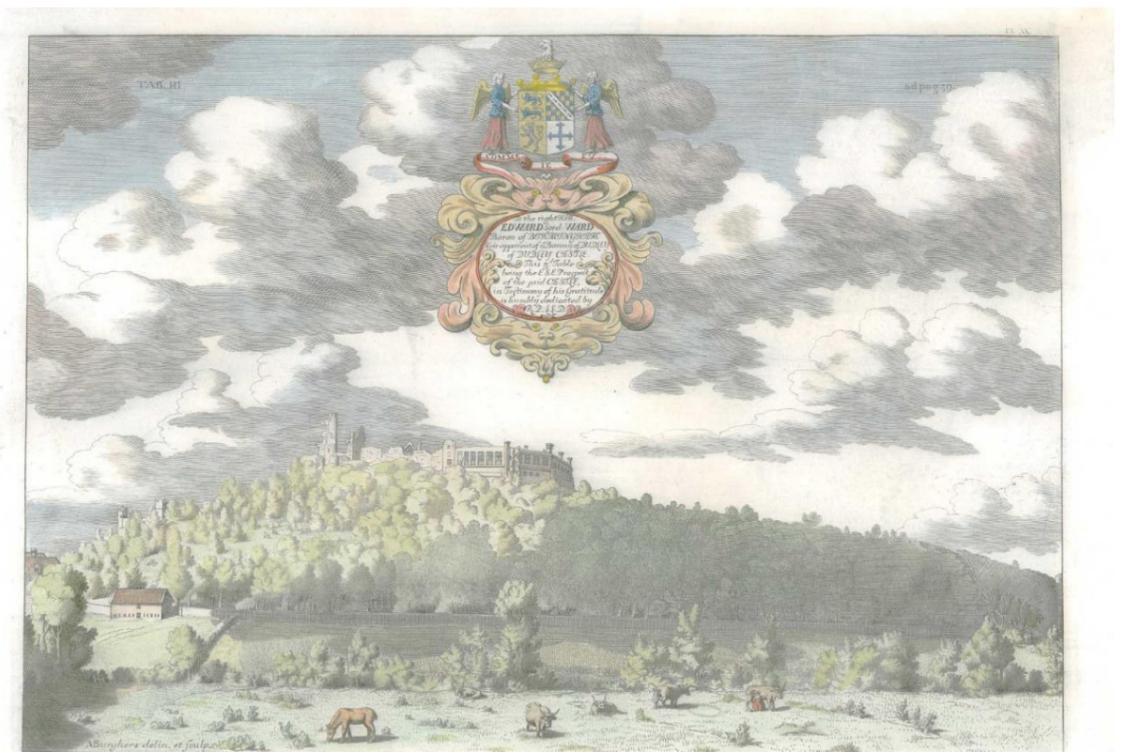
Taken from 'An introduction and Summary of Excavations 1983-85, following text written by J F Mulvehill, Chief Executive, DMBC

I regard the archaeological project as not only contributing positively to the history of the Castle and Dudley but as being a very significant feature in the future tourism development of Dudley Castle Hill and area.

We see the Dudley Castle Hill and area as being a vast heritage park and a major tourist attraction in the West Midlands with National and International appeal. We believe that a theme of English Heritage from primeval times (limestones and fossils), ancient woodland, Saxon village, Norman castle, medieval farmstead, limestone mining, Victorian village and industrial heritage, could be presented in stimulating ways to attract tourists from all walks of life.



Elephant rides within the Castle walls in 1937



Antique Print of Dudley Castle from 1801

2.0 National & Regional Context

2.3 Policy

The local strategy and policies support enhancements to Black Country attractions, the following extracts indicate the support that is provided through local policies. The following statements have been extracted from; the Black Country Core Strategy, Dudley Area Action Plan, Castle Hill Conservation Area and Black Country Strategic Economic Plan.

2.3.1 Black Country Core Strategy

Policy EMP6

Cultural Facilities and the Visitor Economy

Spatial Objective

The Vision for the Black Country involves transformational change whilst respecting and promoting its unique heritage.

The protection, promotion and expansion of existing cultural facilities, visitor attractions and associated businesses will ensure their enhanced role as key economic drivers in stimulating and regenerating the local economy.

A) The Visitor Economy

Visitor attractions will be developed and enhanced at key destinations to ensure that accessibility is maximised and to continue to raise the quality of the visitor experience throughout the Black Country.

In order to maximise the potential of the visitor economy in the Black Country, physical and promotional links to visitor attractions close to the Black Country will be enhanced and promoted particularly links to Birmingham as a Global City and a business economy destination.

B) Other cultural facilities and events

The promotion and protection of other cultural attractions and events which represent and celebrate the wide range of cultural and ethnic diversity across the Black Country will also be encouraged

Policy Justification

The Black Country has a unique past, being at the forefront of the Industrial Revolution, which has left a rich and

varied industrial and cultural legacy as well as an extensive and historically significant canal network.

These assets have attracted an increasing number of visitors to the sub-region and the visitor economy is now a key growth sector.

Business tourism is also a growing sector particularly in terms of high quality hotel and conferencing facilities and the proximity of the Black Country to Birmingham as a global business destination.

The sensitive development of heritage and cultural facilities appealing to the very diverse range of local communities will also contribute to social inclusion and the improvement in the quality of life for all sectors of the local population.

Culture is also recognised by national government as making a significant contribution to 'place making' and delivering sustainable communities.

2.3.2 Dudley Area Action Plan

Black Country Core Strategy

2.6 The Core Strategy expects that development in this corridor will focus on housing development in and around the rejuvenated market town of Dudley combined with a tourism focus of regional and national repute based on the Black Country Living Museum, Dudley Zoo, Dudley Castle, Dudley Canal & Tunnel Trust and the geological and heritage assets in and around the town centre. It is also intended that the corridor will have an excellent green infrastructure through enhanced green spaces and parks as well as increased biodiversity and improved links into such areas as Saltwells Nature Reserve, Wrens Nest NNR, Fens Pool Special Area of Conservation and Barrow Hill Nature Reserve into the open countryside beyond.

The Area Action Plan Boundary

4.1 The Dudley AAP boundary surrounds Dudley's Town Centre and its Conservation Area and encompasses the Castle Hill area and its Conservation Area.

The Castle Hill area has a globally unique cluster of heritage attributes that ensure this area's future profile and success in the visitor economy.



Front Cover of the Black Country Core Strategy and Dudley Area Action Plan

10. Leisure and Tourism

10.1 Dudley Castle, together with Dudley Zoo, the Black Country Living Museum and the Dudley Canal & Tunnel Trust, Town Hall, and their connections to adjacent attractions and amenities including Wrens Nest National Nature reserve define Dudley as the key tourism/visitor economy node of the Black Country.

DUDLEY AREA ACTION PLAN

Adoption March 2017



2.0 National & Regional Context

2.3 Policy

10.2 These attractions, in connection with the other 40 or so geologically significant sites across the Black Country form the core of the Global Geotourism Initiative of the Black Country Global Geopark. This initiative aims to raise the profile of the area's visitor economy to help to support and underpin those very aspects that make Dudley and other areas of the Black Country unique.

10.3 Dudley has a wide range of leisure and tourist attractions in very close proximity to each other offering an unrivalled visitor and heritage learning experience. The Castle, the limestone promontory on which it sits, the internationally palaeontological importance and the rich industrial heritage have provided the foundation for a unique tourism experience in the immediate vicinity of the town centre.

The Wrens Nest, Seven Sisters Cavern, Dudley Castle and nearby Black Country Living Museum have ensured that the town's profile as a tourist destination is significant and are key factors for its future in the global geotourism market.

Regional awareness and the perception of Dudley as a high quality leisure and tourism destination is beginning to gather momentum but this needs to be bolstered and improved by ensuring that appropriate visitor infrastructure is put in place to support Dudley's leisure and tourism offer and accessibility.

2.3.3 Castle Hill Conservation Area

Policy 23

The Council will safeguard and seek to enhance the special architectural, historical, archaeological, geological, ecological interest and open landscape of the Castle Hill Conservation Area while promoting the development of the area as a visitor attraction by:-

- Ensuring the significance of Dudley Castle (Scheduled Ancient Monument), including its setting, is not prejudiced and the key views into and out of the Castle Hill Conservation Area are preserved and enhanced

- Encouraging the enhancement of the existing major tourist attractions such as Dudley Castle, Dudley Canal and Caverns, quarried limestone exposures, and the Tecton Buildings and Zoo in a way that respects the highly sensitive character and setting of the Conservation Area
- Encouraging the conservation and enhancement of the Castle Hill Woodlands, including developing their potential to be a visitor attraction by supporting improved access to paths and wildlife corridors across the hill, footpath signage, interpretation and management of the Castle Hill Woodland and limestone ravines and the associated 'mineral railway' paths
- Encouraging reconnection of Castle Hill with Dudley Town Centre via Castle Street in a way that will preserve and enhance the character and appearance of both Conservation Areas and reveal the significance of their shared history
- Encouraging provision of enhanced access to the Sharrington Range and gatehouse within the Castle in order that the historical and architectural significance of the Castle ruins can be sustained and appreciated and to develop their value as a tourist attraction
- Encouraging the continuation of the repair and architectural reinstatement works to the Tecton Buildings and their sympathetic reuse
- Ensuring the protection of the geological and manmade historic resources such as the Limestone Caverns and encouraging proposals that would enhance these features as visitor attractions whilst respecting their historic, scenic, geological and nature conservation value and setting within the Conservation Area.

2.3.4 Black Country Strategic Economic Plan 2017

Dudley is highlighted within this report, exposing the role that Dudley has to play within the region wide strategies, identifying key projects that have an influence on the borough. The report states the following points:

- Dudley has a key role to play in the visitor economy.
- DMBC in partnership with Warwick Manufacturing Group are pursuing a £29.2m project to develop A Very Light Rail National Innovation Centre and test track at Castle Hill. Funding from the BCLEP has



Conservation Area Character Appraisal for **Castle Hill**

October 2015

already been secured with European funding currently at the full application stage (decision will be known by the summer of 2019). The Centre will spur research innovation and product design in the emerging sectors of very light rail and autonomous vehicle technology, assisting growth for new UK industries supplying domestic and international rail schemes, as well as autonomous pods.

- Enable the growth of the visitor economy and cultural sector in the Black Country, building on the assets in the City of Wolverhampton and Dudley.

Throughout this process the design team have taken reference from a range of reading material associated to this project. We have included a list of the associated documents within the appendices, please refer to Appendix I.



DRAFT AS AT MARCH 2017

2.0 National & Regional Context

2.4 Visitors

Dudley Castle has been identified as one of the top ten castles visited within the UK. This is testament to its location within a site that has many unique assets, which include a zoo, chairlift and land train.

DZG masterplan states that the funding received by HLF, ERDF and Black Country LEP between 2012 and 2015 and the ongoing revenue funded redevelopment to the site has enabled the Zoo to make huge improvements, which have transformed visitor perception and achieved the objective of generating growth in both attendance and income.

Information provided by the Tourism Officer indicates 756,000 visitors visited the sites across Castle Hill in 2018, these attractions include BCLM, DZG, Dudley Canal & Tunnel Trust and Dudley Museum at the Archives.

Following this successful programme of improvements DZG's masterplan has identified upcoming revenue funded projects and the following list has been identified as high priority items scheduled to be undertaken over the next few years:

- Sumatran tiger - Extend the enclosure along the back to the rear of the tiger house
- Bornean orangutan - Create an additional new outdoor exhibit and redevelop the existing outdoor exhibit
- West African chimpanzee - Replace enclosure fence with new higher secure barrier

Other projects include:

- Reinstate European brown bears in the bear ravine
- Provide a new visitor viewing platform at the Asiatic Lion exhibit
- Construct a new house, enclosure & pool for the Brazilian tapir & capybara
- Create an indoor play area to include Changing Places adult complex care changing unit
- Redevelop the highly popular Lemur Wood exhibit to maximise the potential for visitor dwell time

The courtyard within the Castle is used as the scene of 'living demonstrations' organised by the Castle's enthusiastic re-enactment group, along with highly popular ghost walks, birds of prey displays, open air music extravaganzas and children's events. Over the last few years DZG have gathered visitor numbers of attendees to the Castle events.

For those visitors who solely wish to visit the Castle, we offer evening guided tours which are arranged directly through DZG. The site provides around 10 tours each year depending on demand, with any profit assigned to the Castle.

Castle Events Visitor Numbers

Event	2017		2018		Notes
	Amount (of Events)	Amount (of Guests)	Amount (of Events)	Amount (of Guests)	
Student Education Sessions	15	882	27	1509	Students & School Children
History / Ghost Tours about Dudley Castle	330	4500	352	4923	Hosted Daily, No. to be confirmed by DC Staff
Castle Tours	10	198	11	160	Evening only (18:30-20:30)
Paranormal Nights	25	817	34	1499	Hosted by 12 companies
Halloween Hocus Pocus Events	3	519	-	-	From the 26th - 28th of October
Under 5's Day	2	3,478	2	4910	28th - 29th June
Barnados	2	865	2	1062	13th - 14th June
St Georges Day Event	1	2500	1	2255	15:00 - 19:00
Film Night	1	1072	2	2027	Screening on Saturday 5th August
Classic Car Rally	1	211	1	131	23rd July 2017
Karate Kids Event	1	230	-	-	25th June 2017
Santa's Grotto Event	24	15150	24	11455	1st - 24th December
Mad Hatters Christmas Event	-	-	1	437	30th November
Dream Night	-	-	1	837	Free Guests
Bunk with the Beasts	-	-	1	31	28th April
Walk on the Wild Side	--	-	1	182	
Abseil in Support of Alzheimers	-	-	1	34	
World War One 'Beacons of Light'	-	-	1	15	11th November
Total	405	25,724	463	31,467	

Please note there are no visitor numbers collected for the Castle Hill Woodland.

UK Castle Visitor Numbers (Based on ALVA annual visitor figures for 2017)

Castle	Attendance	
	2016	2017
1. Edinburgh Castle	1,780k	2,063k
2. Windsor Castle & Frogmore House	1,432k	TBC
3. Warwick Castle	789k	TBC
4. Leeds Castle	605k	527k
5. Stirling Castle	480k	567k
6. Urquhart Castle	400k	488k
7. Beaulieu Castle	340k	TBC
8. Dover Castle	330k	379k
9. Dudley Castle	310k	302k
10. Corfe Castle	Unknown	247k
19. Kenilworth Castle	108k	118k

2.0 National & Regional Context

2.5 Consultation Process & Stakeholder Involvement

Below is a list of consultations, groups and stakeholders consulted throughout the project:

Stakeholder Event

24th July 2018
Dudley Archives

Representatives were: Historic England, Friends of Dudley Castle, Dudley Council, Dudley Canal and Tunnel Trust, Black Country Living Museum, New Heritage Regeneration, Dudley Zoological Gardens and Canal and River Trust.

The Castle Hill projects were presented to the representatives followed by a Q & A session. Below are some of the comments made at the event:

- An exercise needs to be carried out to collate archaeological and excavation information into an overview
- Emphasis on securing the future of the Castle through activities within the Castle Grounds, such as restoration training opportunities
- Priority of projects is dependent on funding and other pressures
- Improve the heritage assets DZG has on site
- If the Hippodrome were to be demolished this could offer opportunity to link the attractions to the Dudley town centre
- Separating of the Castle and Zoo as attractions has been explored however the practicalities are difficult. Separation presents organisational and ownership issues. There is strength with the combination of the Castle and Zoo.
- A widening focus on activities and events is for future consideration.
- Funding programmes will drive the project programme. Individual programmes could be considered for each project.
- Aim to be a Geo Park by 2019.

Development Sub Group Members Presentation

10th August 2018
DZG Offices

We received positive feedback from the sub group following a presentation to the board by BPN. The following comments were raised following the presentation:

- An apprentice scheme will need to be included in the Castle refurbishment scheme and this could be linked to the Visitor & Education Facility
- Concerns were raised that the document isn't inclusive and doesn't link all the options. This will need to be rectified within the executive summary providing an overall brief.

The comments raised in the meeting were addressed following both the stakeholder event and the sub group presentation. These comments formed conversations of an overall 'Vision' for the project, this came in the form of the Castle Hill Vision. The Vision has been absorbed into the DZG masterplan which has subsequently been updated. This Vision has helped to define ambitions, focus opportunities and provide strategic development aims.

Public Consultation Event

29th August 2018
DZG Offices

BPN produced boards for the event, DMBC provided consultation questionnaires and the event was held at DZG Exit and Gift Shop with representatives from BPN and DZG. Visitors were asked to complete the questionnaires which provided a brief of each project and whether visitors agreed or disagreed with the proposals. The information was collated by DZG and formatted into a spreadsheet to assess the favourable proposals. We received 117 completed questionnaires and the general consensus was that visitors strongly agreed or agreed with the proposals at DZG.

Following the Public Consultation event the information was sent to the Friends of Dudley Castle and included within the ZooNooz, the DZG newsletter to allow regular visitors to be informed of the proposals.

Please refer to appendix L and M to see the consultation questionnaire and results.

Further consultation events and meetings:

Twentieth Century Society

30th July 2018
DZG Offices

A letter of support was received from the Twentieth Century Society following BPN's presentation of the proposed scheme to the regional West Midlands committee. Please refer to Appendix K for letter of support.

Historic England

30th May, 2018
DZG Offices

Jayne Pilkington, Derek Grove and Dean Shaw, met with representatives from Historic England, Nick Carter, Pete Boland and Sarah Lewis to discuss the scheme and in particular the proposals for the Castle and the Tecton Structures, this included a tour around the grounds.

11th January, 2019
Email Correspondence

Following this HE were sent the Rapid Assessment Document by DIA in December for comment, this was their response:

'Historic England have stated that they have no major concerns or objections on the approach taken in the Rapid Assessment. The Rapid Assessment also highlights a number of more substantial proposals, which are likely to require Scheduled Monument Consent (and other permissions). We do not intend to comment on these as part of this response and would request that they be handled through a more detailed pre-application consultation process.'

Dudley Town Centre Area Programme

26th June 2018
Dudley College Broadway Campus

Representative of stakeholders undertaking major developments on Castle Hill & Dudley Town Centre.

Intentionally Left Blank



3.0 Local Context

Intentionally Left Blank

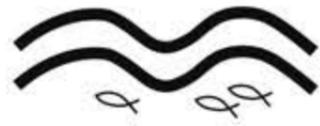


3.0 Local Context

3.1 Site Significance

3.1.1 Timeline Summary

A number of factors give rise to the special interest of the Castle Hill. This is summarized in detail in the Conservation Area Character Appraisal for Castle Hill (2015). Over the lifetime of Dudley there have been key points of historical importance that have shaped and defined Dudley as a town and a location. The icons below provide an insight into the significant periods of physical geological change, landscape movement and human development of the landscape and habitation, which are summarised as follows:



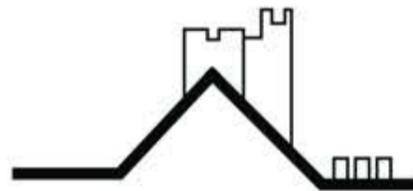
Sea

During the Silurian Period, approximately 430 to 425 million years ago, the area of Dudley was under a warm, shallow, tropical sea which allowed for the deposition of the limestone present at Castle Hill and Wrens Nest in Dudley. The limestone beds contain many fossils and are particularly famous for the 'Dudley Bug', a species of trilobite and many other fossils, which made Dudley an important centre for the study of life on our planet and the understanding of evolution.



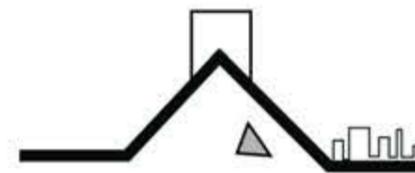
Silurian

After the Silurian Period tectonic activity caused uplifting of the surrounding area and folding of the limestone to create the topography of Castle Hill which has remained largely intact since.



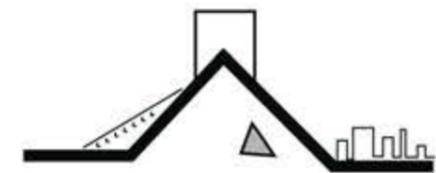
Castle

Archaeological remains have provided evidence of the earlier development of the Castle, illustrating that there has been a presence at the Castle site from the 11th century through to the 18th century. The settlements location would have benefited from the natural topography enabling the historic market town of Dudley to grow up around the foot of the Castle.



Dudley & Mining

Limestone was the key mineral for the region's iron founding industry - the keystone to the intensity of the Industrial Revolution here in Dudley. Dudley expanded extensively during this industrial boom extending the townscape and its population.



Zoo

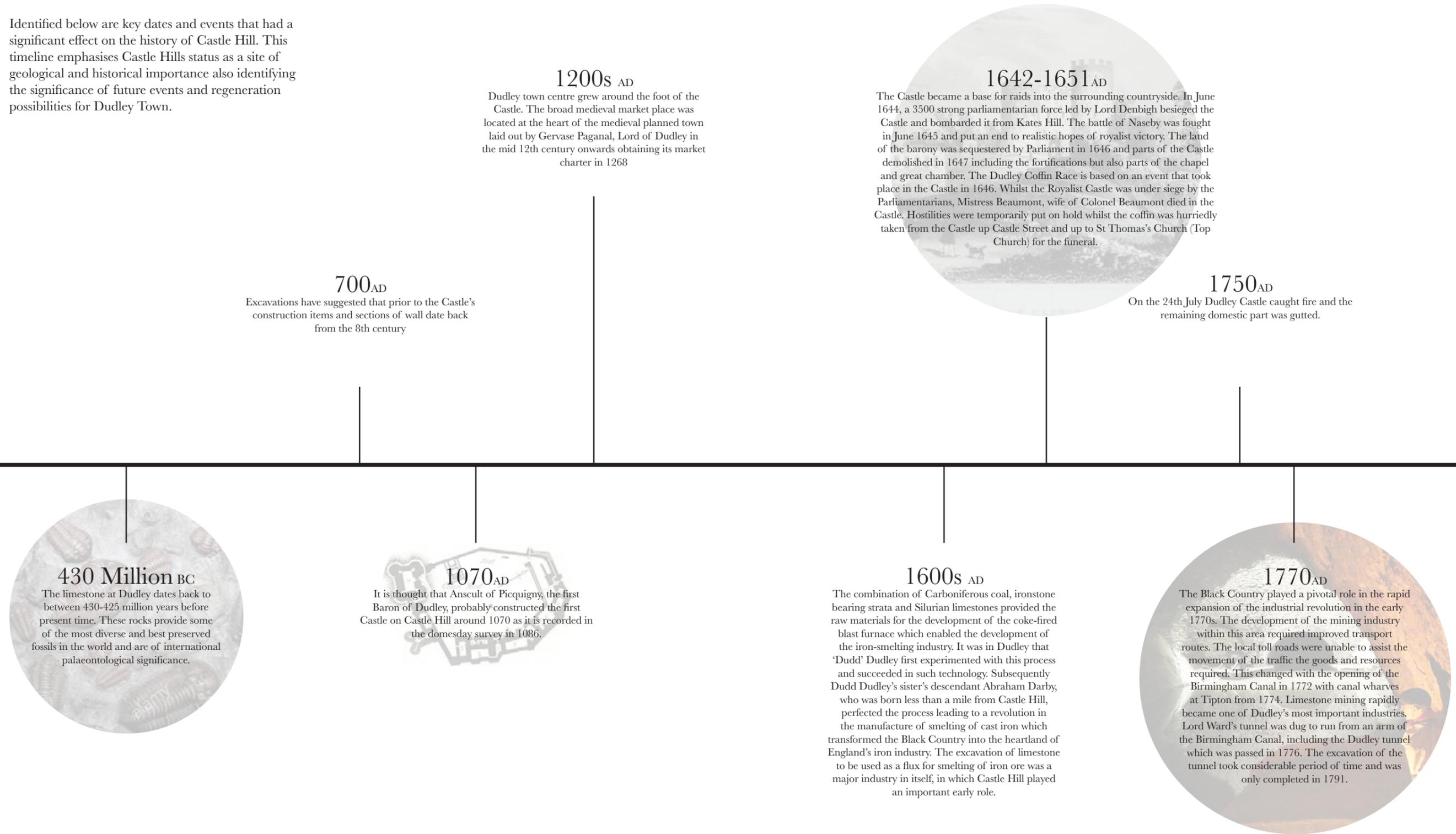
The founding of the Zoo as a major tourist attraction during the 1930s provided a unique collection of rare animals and buildings in the international modern style by the Tecton Partnership, which have been designated as Grade II and II* listed buildings.

3.0 Local Context

3.1 Site Significance

3.1.2 Timeline

Identified below are key dates and events that had a significant effect on the history of Castle Hill. This timeline emphasises Castle Hill's status as a site of geological and historical importance also identifying the significance of future events and regeneration possibilities for Dudley Town.



1800s - 1900s AD

During the late 19th and 20th century collapses of underground workings are recorded on early Ordnance Survey maps where crown holes appeared.

1915 AD
Dudley Castle became a Scheduled Monument

1949 AD
Dudley Castle added to the statutory list as Grade I.

1938 - 1945 AD
During WWII the former limestone caverns were used for storing military clothing and became a shadow munitions factory, it is known to this day as the Stores Cavern Mine

2004 AD
Lime working remains became a Scheduled Monument

1980s AD
Restoration of the Castle and Tectons occurred in the 1980s alongside a programme of archaeological excavations.

2015 AD
Restoration of Tecton Structures by BPN Architects and their subsequent removal from the Heritage at Risk Register maintained by Historic England'. Visitor car park, recreation route linking the three visitor attractions and new entrance to DZG created.

1800s AD
The Georgian lodges and boundary walls illustrate the management of the Castle as private pleasure grounds in the late 18th and early 19th century (following diversion of Castle Hill Road). The small stone lodge was built with another similar building at the bottom of Castle Hill, acting as gathouses to the estate.

1830s - 1840s AD
The Earl used the caverns for a series of events and entertainments, including balls and concerts, as well as the famous lectures by Sir Roderick Murchison where he expounded his theories on the Silurian system of rocks and the sea creatures within them.

1850 AD
Mining excavations of appear to have started in the north near the canal wharves and spread southwards reaching under the Castle itself by the 1850s.

1810 AD
In 1810 the Earl of Dudley paid workmen to clear rubble from the Castle and to rebuild part of the keep and chapel undercroft as well as planting ivy to create a more romantic ruin.

1930s AD
The Zoo was developed by the Earl of Dudley, Ernest Marsh and Captain Frank Cooper. Cooper transferred his collection at Oxford Zoo to Dudley, providing an income to help maintain the site of the Castle and its ruins. The construction of the Tectons was completed and the Zoo was opened in 1937

1970s AD
Tecton's added to the statutory list

2009 AD
Continuing deterioration of the Tectons resulted in the buildings being placed on the world heritage fund's watch list in 2009

1800s - 1900s AD
Georgian and Victorian footpaths, garden walls, carriage drives and woodlands illustrate development of Castle Hill as a romantic landscape. The Castle lawn or courtyard illustrates the area that became a focus of the enjoyment of the Castle ruins by Dudley's townspeople, the site of numerous fetes and now the heart of the zoological gardens offering views and access to the Castle ruins.

1950s AD
Chairlift at Dudley Zoological Gardens is installed

2022 AD
Midland Metro Extension to Dudley to be completed by late 2022 and Brierley Hill by late 2023.

3.0 Local Context

3.2 Attractions

Castle Hill sits centrally to key attractions within Dudley and lies immediately to the east and north of Dudley's historic town centre (also a conservation area) and it divides it from the areas of Castle fields and Castle gate to the east which have been developed as a focus of tourism with varying leisure venues (multi-screen cinema, bowling alley, hotels and restaurants), the Black Country Living Museum and Dudley Canal & Tunnel Trust and Wharf. The large Priory housing estate lies to the west with access to the Castle Hill Woodlands, Gervase Drive, Forest Drive and many gardens backing onto the publicly accessible land of the Hill.

The surrounding land uses include the Zoo and Castle, which together form a single important tourism and education site. This reflects a use that has existed since, at least the 19th century when the Earl of Dudley improved the Castle ruins for access by visitors and use of the Castle courtyard for fêtes. In summary the key sites in and around the study area include:

Dudley Castle

Dudley Castle is the most visible symbol of Dudley's medieval origin as the heart of a great baronial estate. The Castle remains stand as both a military structure and a display of wealth and aristocratic authority. Associated buildings provide evidence of the use of the Castle area as the focus of the Earl of Dudley's estate administration into the 19th century. The Castle now stands at the centre of Dudley Zoological Gardens and is visible for miles around.



Dudley Zoo

The Zoo was developed by the Earl of Dudley, along with Ernest Marsh (of Marsh and Baxter's) and Captain Frank Cooper (owner of the famous Oxford Marmalade Company) through the transfer of Cooper's collection at Oxford Zoo, along with additions from elsewhere. It provided an important addition to Dudley and also provided an income to help maintain the site of the Castle and its ruins.

The buildings by Berthold Lubetkin and the Tecton Partnership (including Structural Engineer Ove Arup) are one of the finest collections of early modernist structures in Britain. Each providing a unique form designed for its purpose and location. They were also held up for creating a Zoo without bars, whilst their scale and placement was designed to avoid overt intrusion into views of the Castle ruins.

In 2013, the DZG received £1m from the ERDF to enhance the visitor offer, this included an enhanced entrance, new exit point, improved signage and public realm, refurbishment of the external appearance of the listed office. It also included the development of new visitor welcoming arrangements, which incorporates a new access road, secondary road, recreational route and visitor hub.



Black Country Living Museum

The idea of the museum was developed in the 1950s by the Borough Librarian in Dudley and other interested local individuals. In 1966 Dudley Borough Council set up a Black Country Museum section within their museum department and later with such a high demand from the public and as the range and size of items collected grew, a proposal was set for an open-air museum, where artefacts could be displayed in their true context. The museum has now been open to the public since 1978 and is the UK's third most-visited open-air museum. The museum is now undertaking further investment to widen and enhance their offer to visitors. In 2017 the BCLM received £9.8m for their 'Forging Ahead' project, a £21.7m scheme that will see the open-air museum expanded by a third of its current size.



Dudley Town Centre

Occupied since the 7th-9th century, Dudley remained a small settlement until the 12th century when, the Paganel family (then Barons of Dudley) undertook a programme of improvements to their estate. This included rebuilding their Castle in stone, founding St James' Priory and planning of a town, including a market. The town grew during the 13th/14th century, with the earliest record of a coal mining in the area. During the 17th century the town's growth as a centre for metalworking continued and by the 18th century Dudley drove forward the town's revolution as the heart of a major manufacturing district. By 1832, the population of Dudley had reached 23,043. The early 20th century and, in particular, the period between the two World Wars, was a time of considerable investment in the buildings of Dudley, reflecting its development as a town centre. During the later 20th century there was considerable loss of the town's historic buildings, for new commercial developments. In the last decades of the 20th century the town centre was the focus of office development, both for the Council and private uses. Dudley Council has been successful in leveraging external grant funding for Dudley Town Centre. Just over £3m HLF funding has been awarded via the Townscape Heritage Scheme and a £6.7m public realm scheme funded by ERDF.

Wrens Nest

Wren's Nest was declared a National Nature Reserve (NNR) in 1956, the first to be designated for its outstanding geology. Wren's Nest is of international importance both for the quality and quantity of its fossils, but also for its value as an educational resource. Wren's Nest Hill and Mons Hill are made of Wenlock limestone composed of the remains of ancient sea creatures that lived more than 400 million years ago known as the Silurian period. These ancient fossils are so beautifully preserved that they are displayed in museums throughout the world and geologists come from far and near to study and collect them. Many of the best fossils were found in the 18th and 19th centuries. During this time the limestone rock was being excavated and burnt to produce lime, an important material for agriculture and industry. This mining activity left great scars on the flanks of the hill and many large and spectacular caverns such as those at Wren's Nest. In 2008, Dudley Council were awarded nearly £800,000 to the Wrens Nest Nature Reserve for its project, 'Ripples Through Time'. In 2010 the project received support of £70,000 from Natural England's Natural Assets programme funded by Advantage West Midlands (AWM).

St James's Priory

The priory was founded around 1160 by Gervaise Paganel, then Lord of Dudley Castle. Its major function was to provide a place of burial for the Lords of the Castle and hospitality, acting as a guesthouse for the Castle. In 1545 the estate was granted to Sir John Dudley, and the church and buildings fell into decay. The site was later used for various industrial purposes, including a tannery, a water mill and an iron works. The remains of a large kiln inserted in the western range survive from this industrial period. The remains of the priory are Grade I listed. In 2010 the priory and surrounding park was awarded funding of over £1.78m by the HLF through their 'Parks for People' programme to undertake major improvements, the priory benefited from structural stability and improvements to its setting.

Dudley Canal & Tunnel Trust

Dudley Canal & Tunnel Trust was created to protect and preserve the tunnels. Running regular guided boat trips through the tunnels, accompanied by videos, lifelike reconstructions and stunning music and light shows. These excursions attract over 80,000 visitors every year.

Limestone mining has left a spectacular legacy of quarries and caverns, including Dark Cavern which is Britain's largest man-made limestone cavern. The caverns were linked by subterranean canal tunnels, which are unique to Dudley. These were connected to the national canal system by the Dudley tunnel, the earliest narrow boat canal tunnel in the world. Built in 1785 and just over a mile long, it cuts the English watershed and when first built was the longest canal tunnel in England. In 2013 Dudley Canal Trust was successful in obtaining a confirmed grant of £989,200 from the European Regional Development Fund, Heritage Lottery Fund, Biffa Award and the Black Country Local Enterprise Partnership to build a new learning and access centre, the Portal, which was completed in 2015.

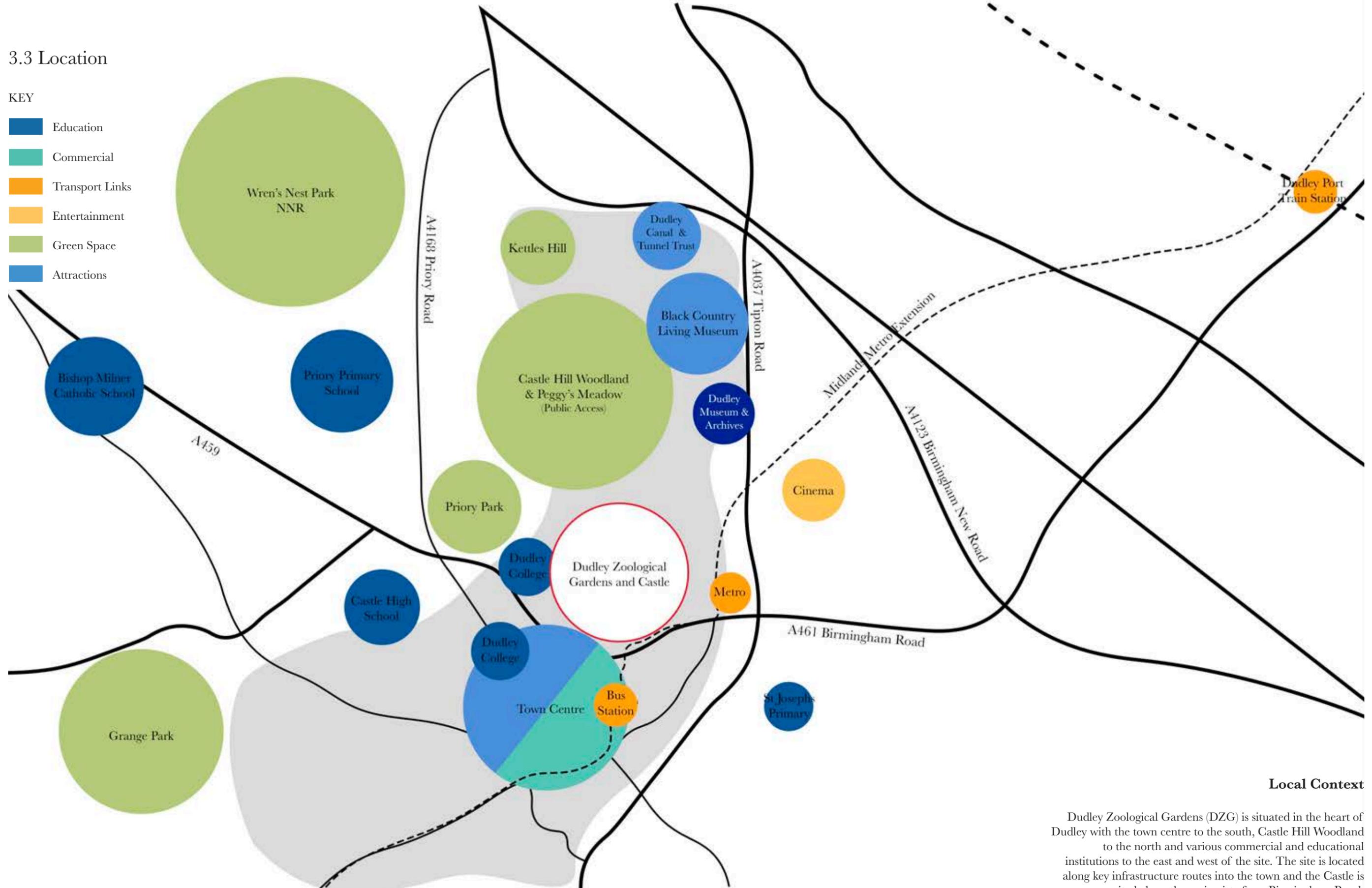


3.0 Local Context

3.3 Location

KEY

- Education
- Commercial
- Transport Links
- Entertainment
- Green Space
- Attractions



Local Context

Dudley Zoological Gardens (DZG) is situated in the heart of Dudley with the town centre to the south, Castle Hill Woodland to the north and various commercial and educational institutions to the east and west of the site. The site is located along key infrastructure routes into the town and the Castle is sited along the main vista from Birmingham Road.

3.0 Local Context

3.4 Local Planning Proposals

Over the last few years extensive regeneration has taken place to the east of the site between the Black Country Living Museum and the Zoological Gardens providing a parking and a recreational route between the two sites which extends into Peggy’s Meadow.

Other applications include the Midland Metro Extension, providing a metro stop to the entrance of DZG, it is proposed that the Very Light Rail National Innovation Centre will also be located here.

The planning applications stated below are within close proximity to Castle Hill, these applications have either been granted permission or are in the process of being determined:

1. Black Country Living Museum’s Second Entrance
Funded by: ERDF
Application No. P14/1308
2. DZG Farmyard Building
Application No. P16/1754
3. DZG Snow Leopard Enclosure
Application No. P17/0368
4. DZG Giant Anteater House
Application No. P17/0681
5. DZG Aviary
Application No. P17/1567
6. Black Country Living Museum Visitor Centre (to be determined)
Funded by: HLF & LEP
Application No. P17/1718
7. Very Light Rail National Innovation Centre
Funded by: BCLEP & ERDF (still to be confirmed)
Application No. P17/1729
8. Institute of Transformational Technologies
Application No. P18/0736
9. Portersfield Retail Leisure and Residential Development
(to be determined)
Application No. P18/0590

Further applications have been made to Dudley Metropolitan Borough Council (DMBC) the West Midlands Combined Authority (WMCA) are progressing the redevelopment of the bus station as a new bus interchange.

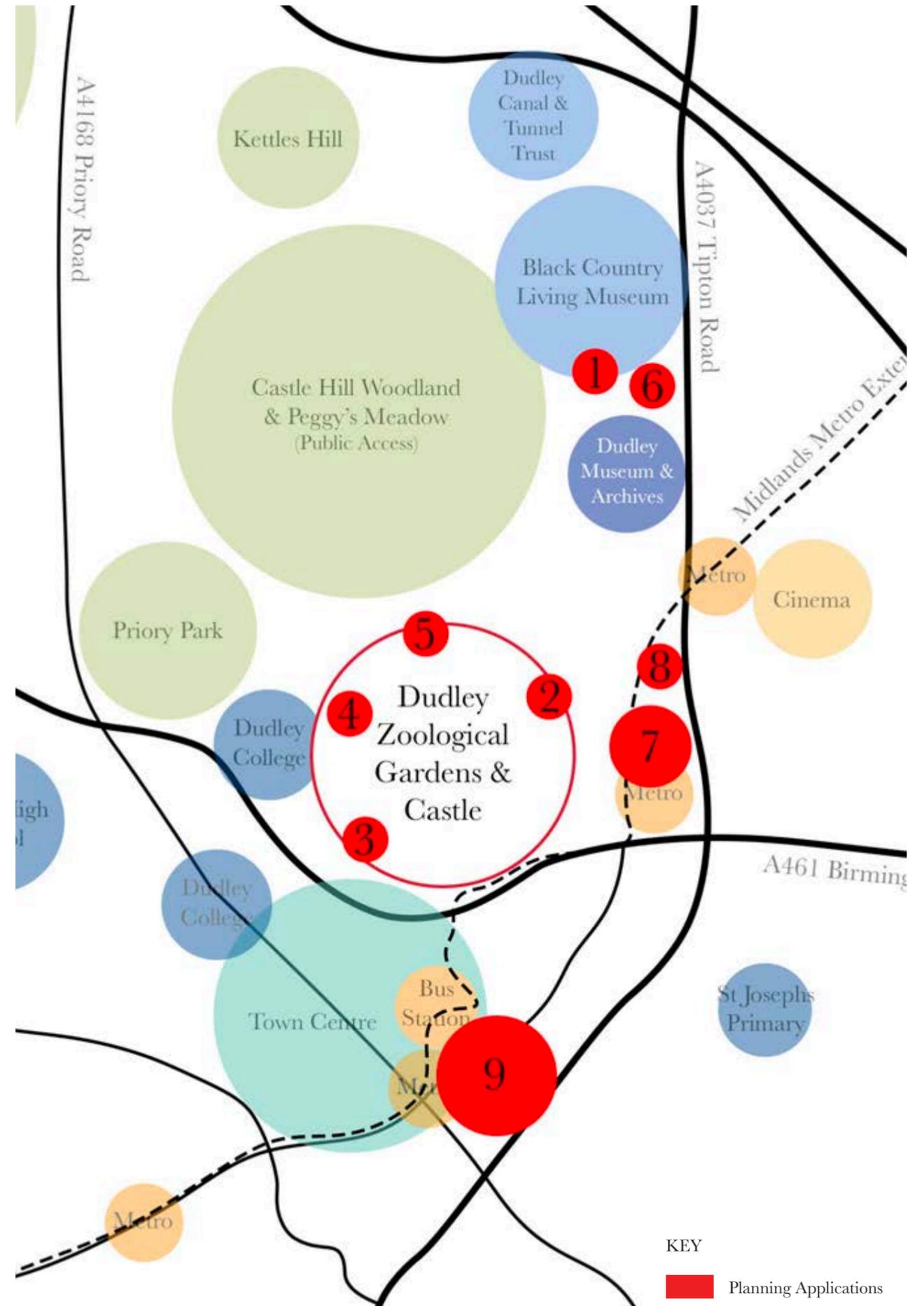


Diagram indicating local planning applications

3.0 Local Context

3.5 Local Funding

Below is a list of the successful funding schemes that have shaped Dudleys attractions, geological sites, heritage assets and places of worship:

- Dudley Council has been successful in leveraging in external grant funding for Dudley town centre. Just over £3m HLF funding has been awarded via the Townscape Heritage Scheme and a £6.7m public realm scheme funded partly by ERDF.
- In 2008, Dudley Council was successful in being awarded nearly £800,000 to the Wrens Nest Nature Reserve for its project, 'Ripples Through Time.' In 2010 the project received additional support of £70,000 from Natural England's Natural Assets programme funded by AWM.
- In 2010 Priory Park was award funding of over £1.78m by the HLF through their 'Parks for People' programme.
- In 2013 Dudley Canal & Tunnel Trust was successful in obtaining a confirmed grant of £989,200 to build a new Learning and Access centre, the Portal'.
- In 2017 the BCLM received £9.8m from the HLF for their 'Forging Ahead' project, a £21.7m scheme that will see the open-air museum expanded by a third'.
- Top Church (St Thomas) and Bottom Church (St Edmunds) were successfully awarded grants from the HLF via the Places of Worship scheme in order to undertake fabric repairs.

KEY

- HLF (Heritage Lottery Funding)
- ODPM (Office of the Deputy Prime Minister)
- ERDF (European Regional Development Fund)
- WMCA/BCLEP (Black Country Local Enterprise Partnership)
- Other

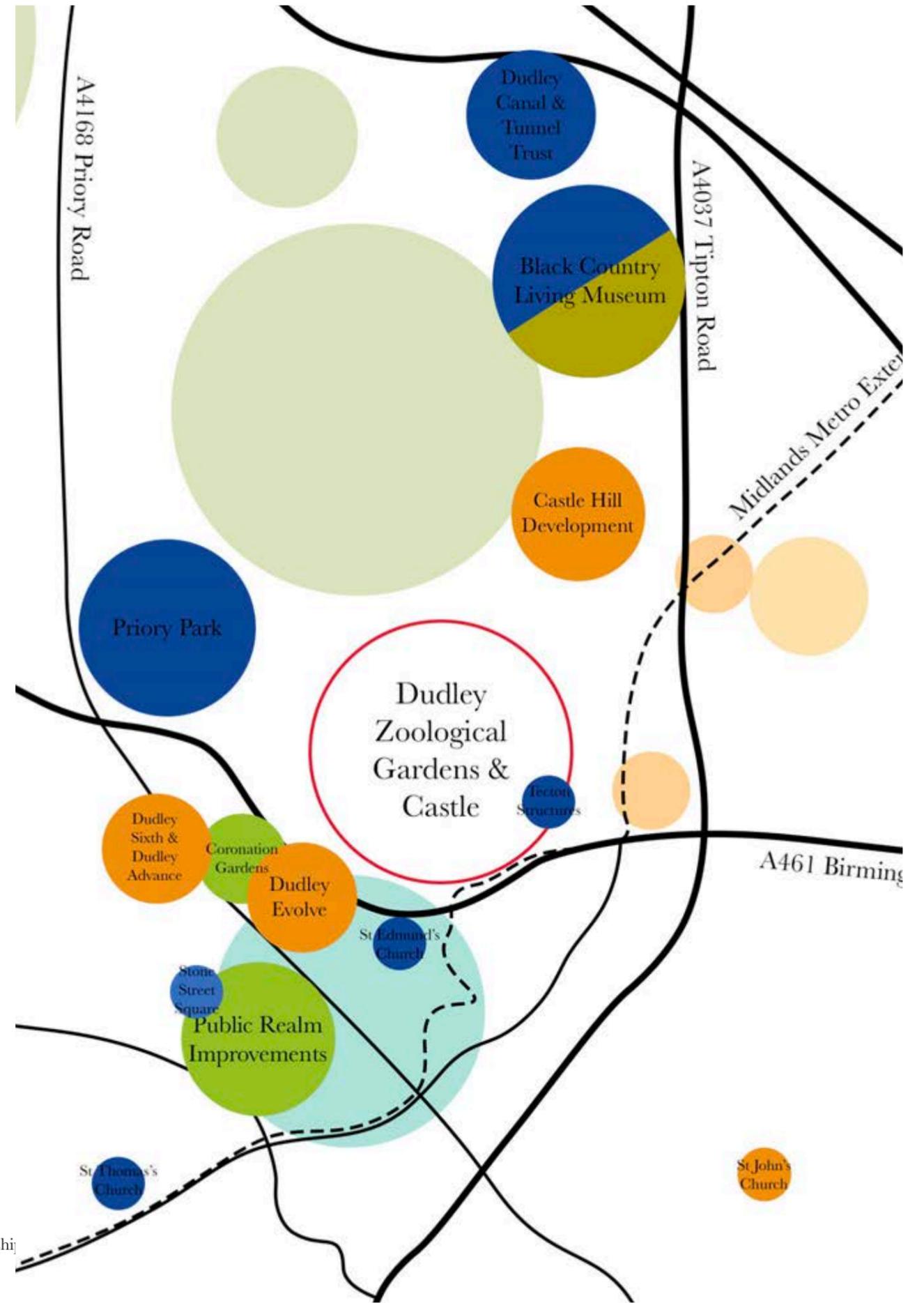


Diagram indicating local regeneration projects and there funding

3.0 Local Context

3.6 Masterplan

The adjacent diagram indicates the future vision of Castle Hill and its immediate context. The Travelodge, Dudley Museum and Archives and the Second Entrance at BCLM have been completed within the past few years. The Midland Metro, VLRNIC and IOTT are to be completed within the coming years.

This diagram encompasses both the planning proposal and funding diagrams equating to the masterplan and the future regeneration for Castle Hill.



Black Country Living Museum



Institute of Transformational Technologies



Very Light Rail National Innovation Centre



Midland Metro Extension

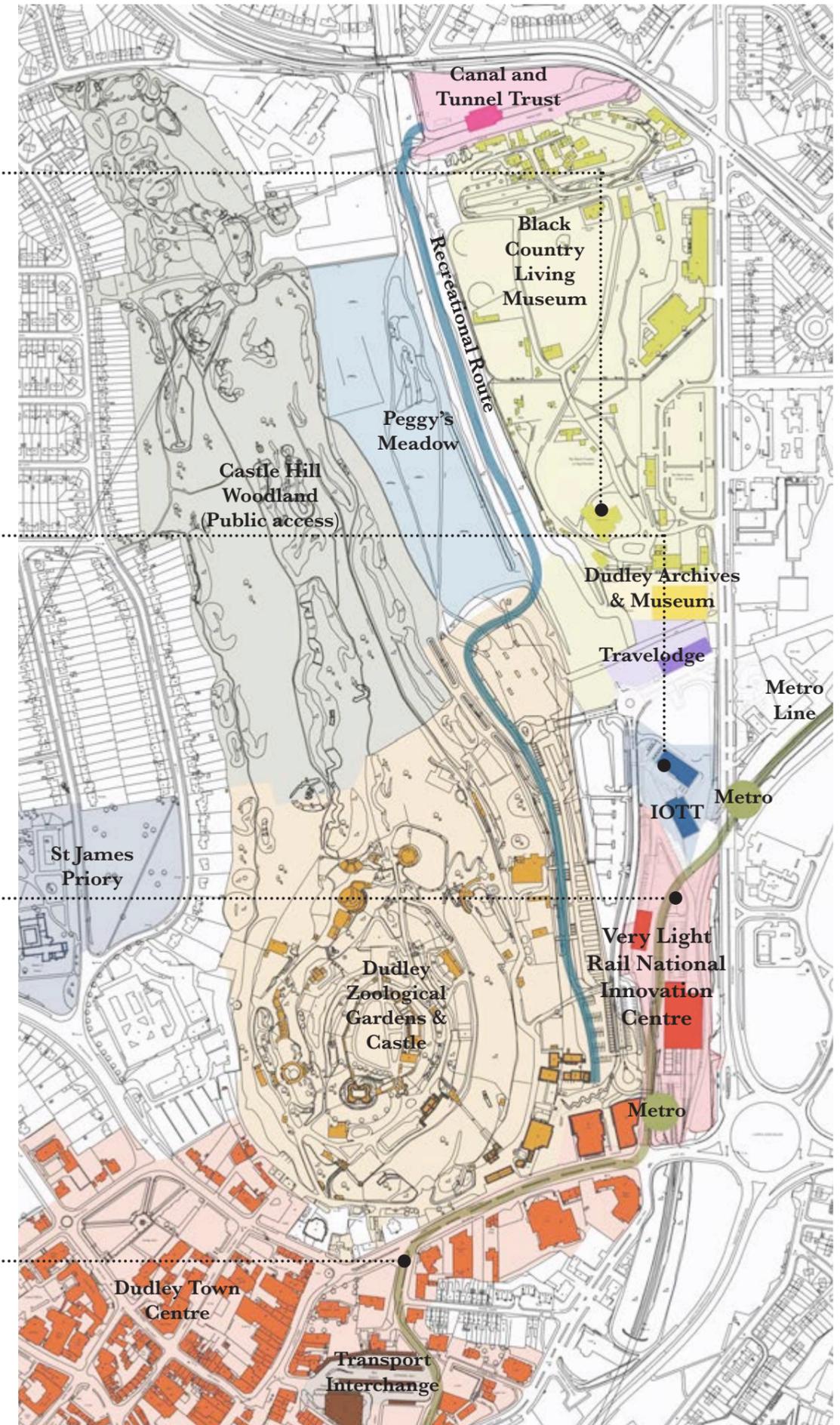


Diagram indicating proposals within and around Castle Hill over the next 10 years

Intentionally Left Blank



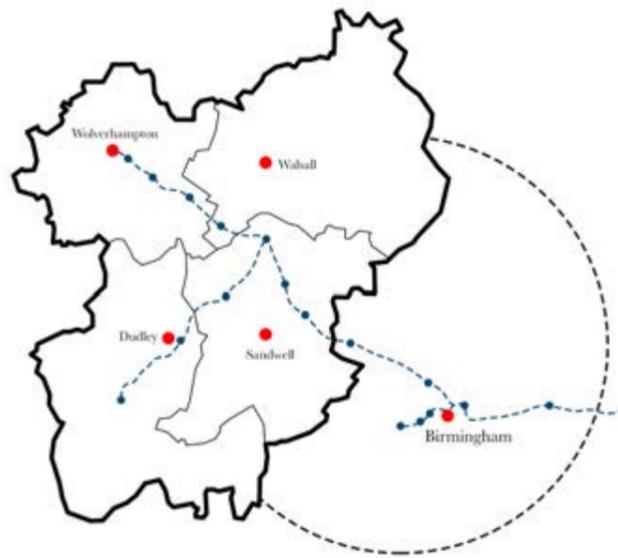
4.0 Castle Hill Vision

4.0 Castle Hill Vision

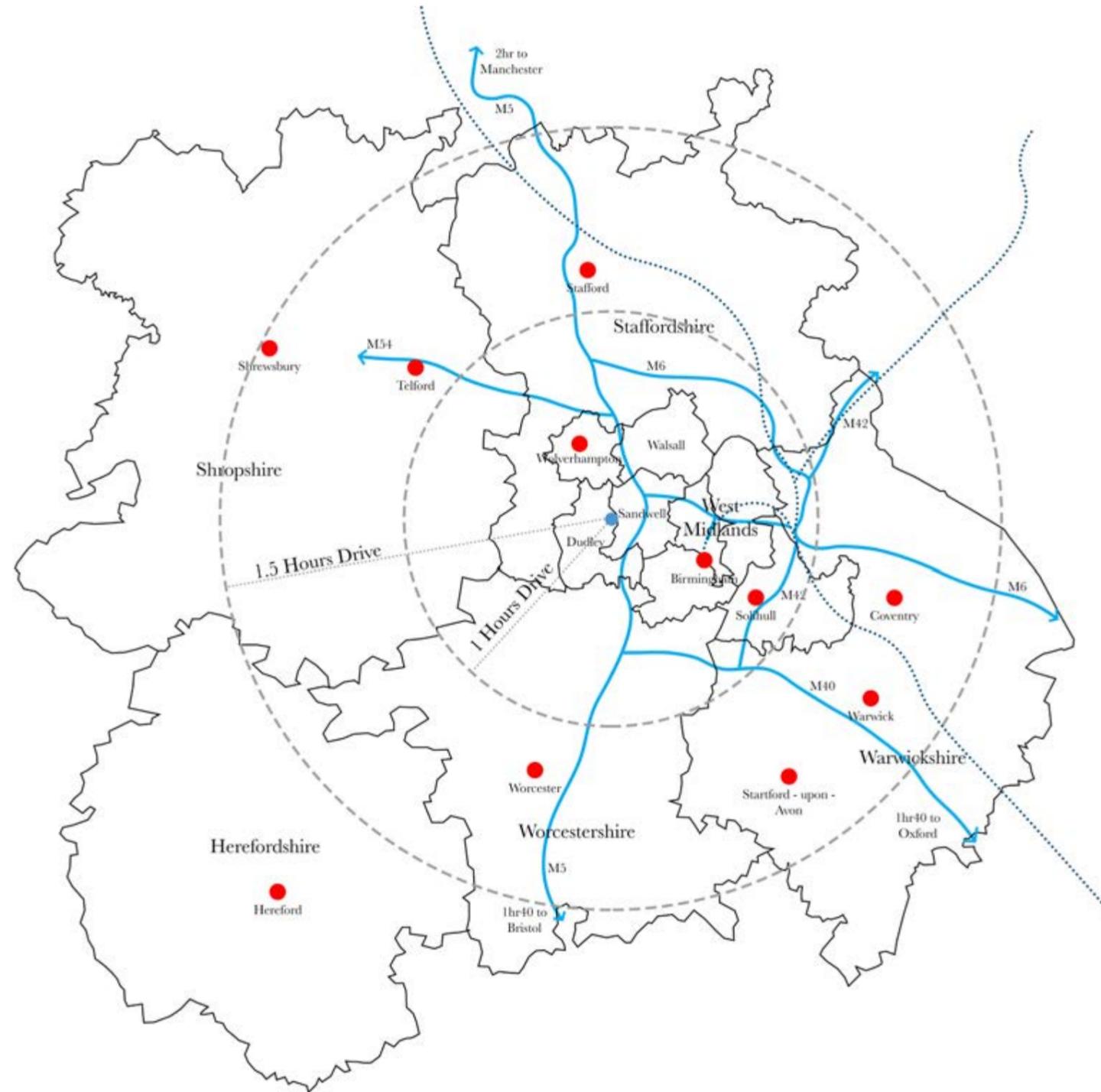
4.1 Location

Dudley sits within the Black Country, made up of four metropolitan boroughs; Wolverhampton, Walsall, Sandwell and Dudley. During the industrial revolution, the Black Country became one of the most industrialised parts of Britain and Dudley was at the heart of it.

Dudley sits in close proximity to Birmingham and Wolverhampton and within the next 5 years will have strong public transport routes to both cities via the Midland Metro, demonstrated in the diagram below. Future HS2 proposals will increase its ease of accessibility to the rest of the UK through its proximity to Birmingham.



Dudley Zoological Garden location within the context of the Black Country indicating the route of the Midland Metro and future extensions to Brierley Hill



Dudley Zoological Garden location within the context of the Black Country and the surrounding counties indicating the future HS2 route.

4.0 Castle Hill Vision

4.2 Public Open Space & Canal Network

Within close proximity of DZG are large swathes of public space, these consist of parks, woodland, geoparks, gardens and nature reserves. Each concentric circle represents 500m from the Castle Hill site indicating the close proximity.

Castle Hill Woodland is a large green area with public access. The woodland along with others in close proximity, form part of a chain of green spaces that are corridors for wildlife, notably the high concentration of species of bats that are a special feature of both Castle Hill and Wrens Nest.

The extensive canal network forms important connectivity between the green open spaces. The canals are a system of integrated multifunctional green corridors which support wildlife as well as providing important linear recreational routes for residents and visitors to walk and cycle.

Highlighted in red are sites of national geological significance which have been identified by Black Country Geosites Initiative. These have been numbered according to the Geosite list indicated with previous sections of the document.



- KEY**
- Public Open Space
 - Geo Sites

Diagram indicating public spaces within Dudley and the surrounding area

4.0 Castle Hill Vision

4.3 Context

4.3.1 Current Uses / Activities

DZG is located to the north of Dudley Town Centre, on the southern edge of Castle Hill. Birmingham Road the main link to Birmingham runs along the southern edge of the site, providing a key vista to the Castle, signifying the heart of Dudley. Future proposals for the Midland Metro extension will be completed by 2022 and will provide a metro station to the east of the site within a few hundred metres of the Zoo entrance.

Within the vicinity of the site is a range of attractions and green spaces. Predominantly to the north lies Castle Hill Woodland, historically referred to as Coneygre and beyond Wren's Nest NNR, a national nature reserve with a strong geological past. To the east of the site industrial and commercial sectors, to the south Dudley town centre and to the west various historic attractions such as Priory Park, which includes St James's Priory and the Shropshire countryside beyond.

KEY

- Public Building
- Education
- Attractions
- Commercial
- Transport Links
- Entertainment
- Green Space
- Industrial
- Residential

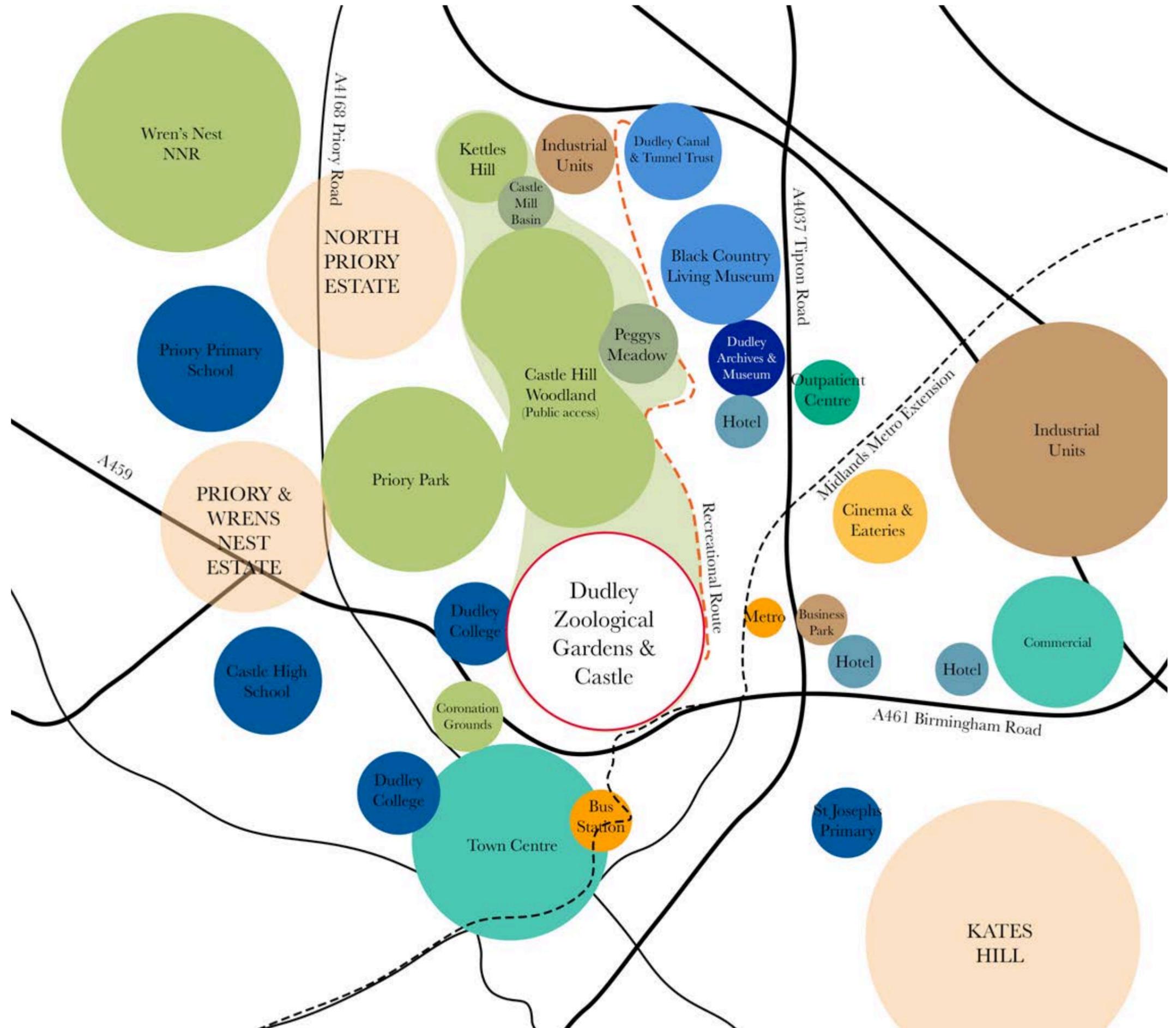


Diagram indicating use and activities within the local context

4.0 Castle Hill Vision

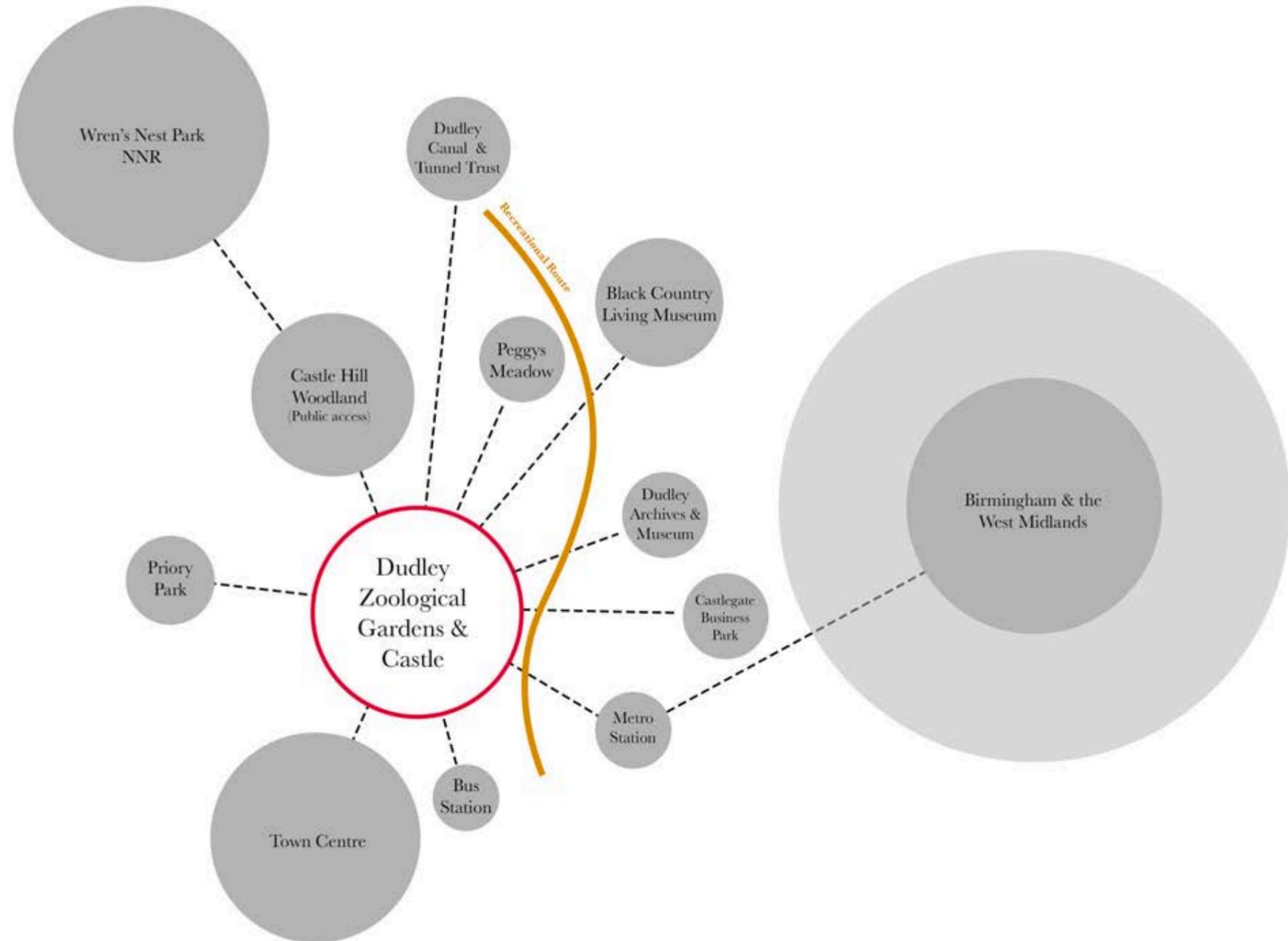
4.4 Connectivity & Adjacencies

4.4.1 Surrounding Attractions

Dudley Zoological Gardens (DZG) is situated at the centre of key attractions in and around Dudley. The attractions indicated on the diagram are all within walking distance. The recently completed recreational route connects the three main visitor attractions at Castle Hill; Dudley Canal & Tunnel Trust, Black Country Living Museum and DZG. The route allows visitors to easily cycle or walk from one to the other. Furthermore, the future Midland Metro system will allow the attractions in Dudley to be easily accessible from Birmingham. This high concentration of activities within Dudley is an unrivalled asset to Dudley.

Future aspirations have been spoken of concerning the connectivity between attractions. DMBC have proposed the use of a combined ticket to allow visitors to explore three visitor attractions within the borough. This could be extended into a passport system where visitors can collect stamps at each attraction helping to promote the wider visitor experiences within the region, similar to Ironbridge. DZG have already agreed in principle that they would be happy to participate in this scheme.

The overarching aspiration of the Council is to encourage visitors to spend several days in Dudley rather than coming as day trippers. The Castle Hill Vision is a key part of this, but the connectivity and promotion of such between all the borough attractions is critical.



4.0 Castle Hill Vision

4.5 Opportunities

The Castle ruins act as a visual node within Dudley to the central attractions within the Castle Hill site. The Zoo entrance currently sits within this area however within the coming years large amounts of work will be concentrated within this area, including the Very Light Rail National Innovation Centre, the Metro stop, the Institute of Transformational Technologies. Dudley Zoo has the opportunity to become an anchor point to all attractions through its iconic Castle ruins and established location.

The Zoo and its location are ideally placed to play a significant part in the visitor experience and could expand its offer to include other uses and functions. Complementing the unique concentration of activities on Castle Hill.

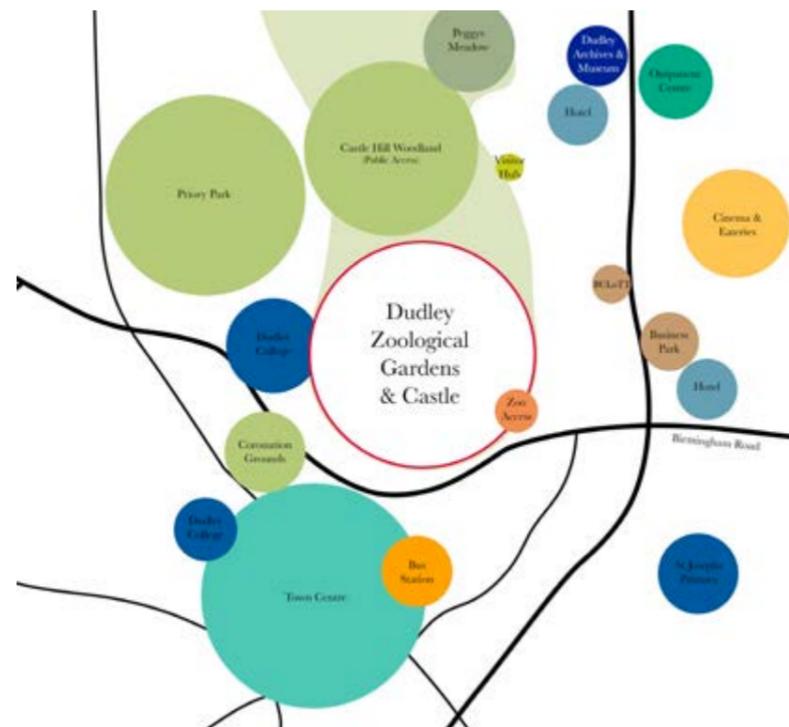


Diagram indicating the existing layout

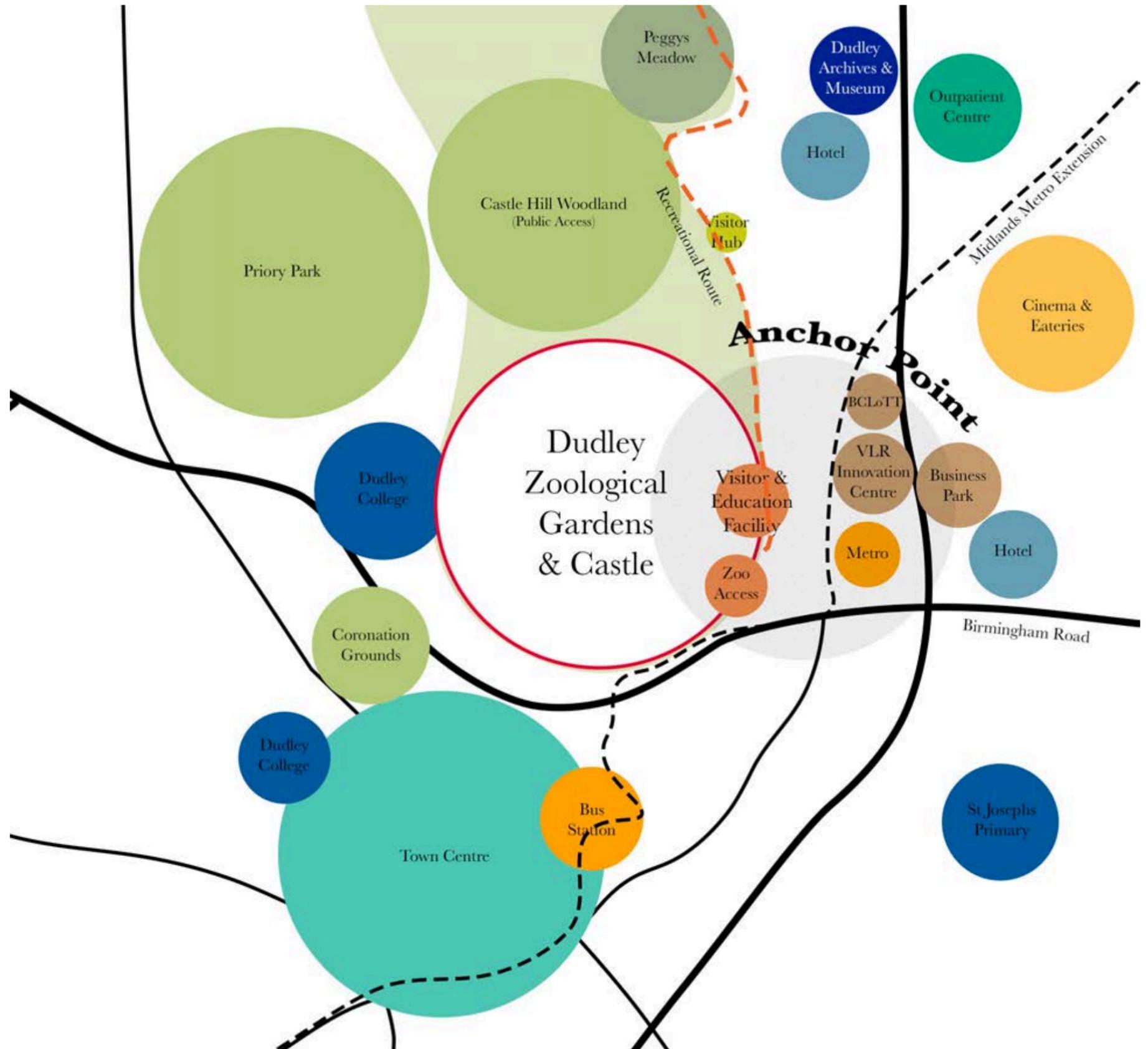
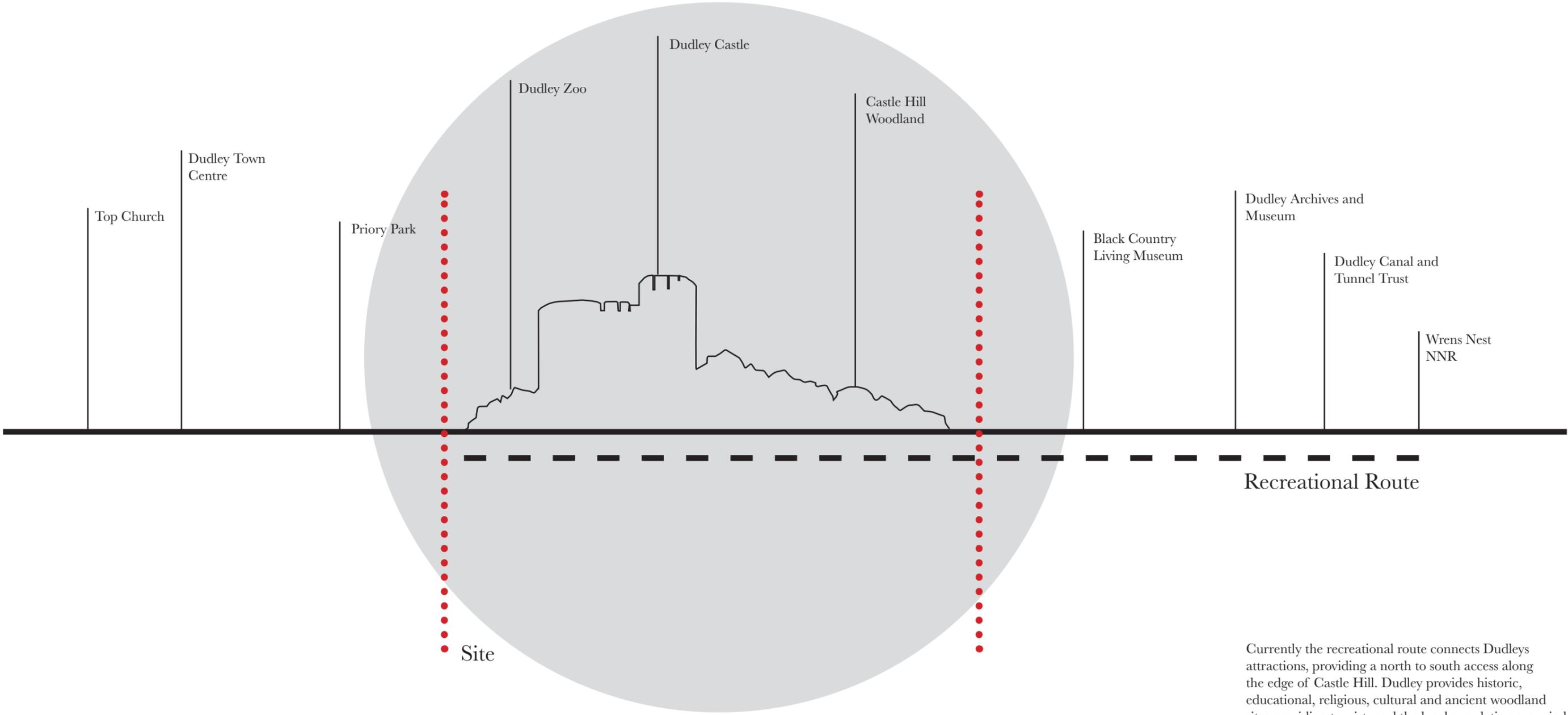


Diagram indicating the future proposals within close proximity to the proposed site

4.0 Castle Hill Vision

4.6 Concept

4.6 1 Existing condition, proximities and adjacencies of attractions

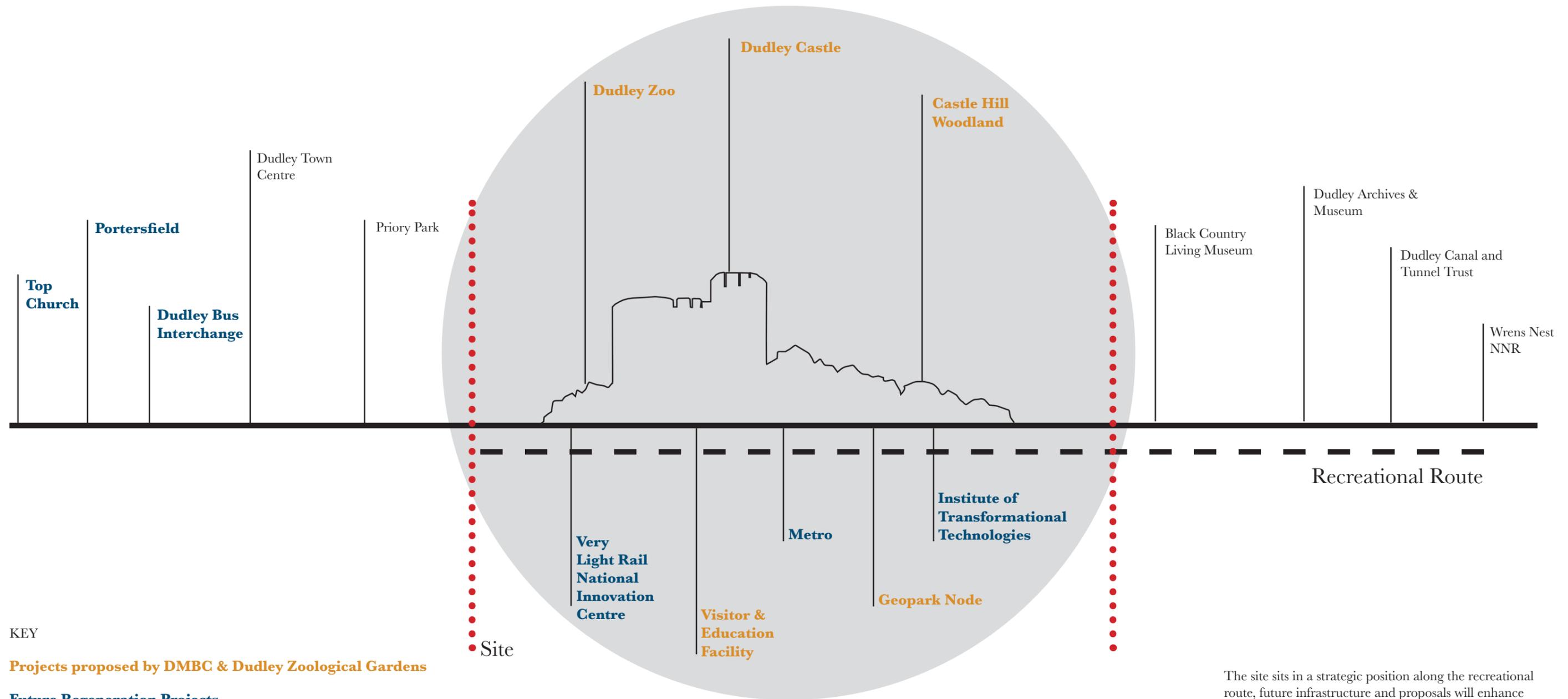


Currently the recreational route connects Dudleys attractions, providing a north to south access along the edge of Castle Hill. Dudley provides historic, educational, religious, cultural and ancient woodland sites providing tourists and the local population a myriad of choice within close proximity. Castle Hill currently consists of: Dudley Zoological Gardens, Dudley Castle and Castle Hill Woodland.

4.0 Castle Hill Vision

4.6 Concept

4.6.2 Proposed



KEY

Projects proposed by DMBC & Dudley Zoological Gardens

Future Regeneration Projects

Existing

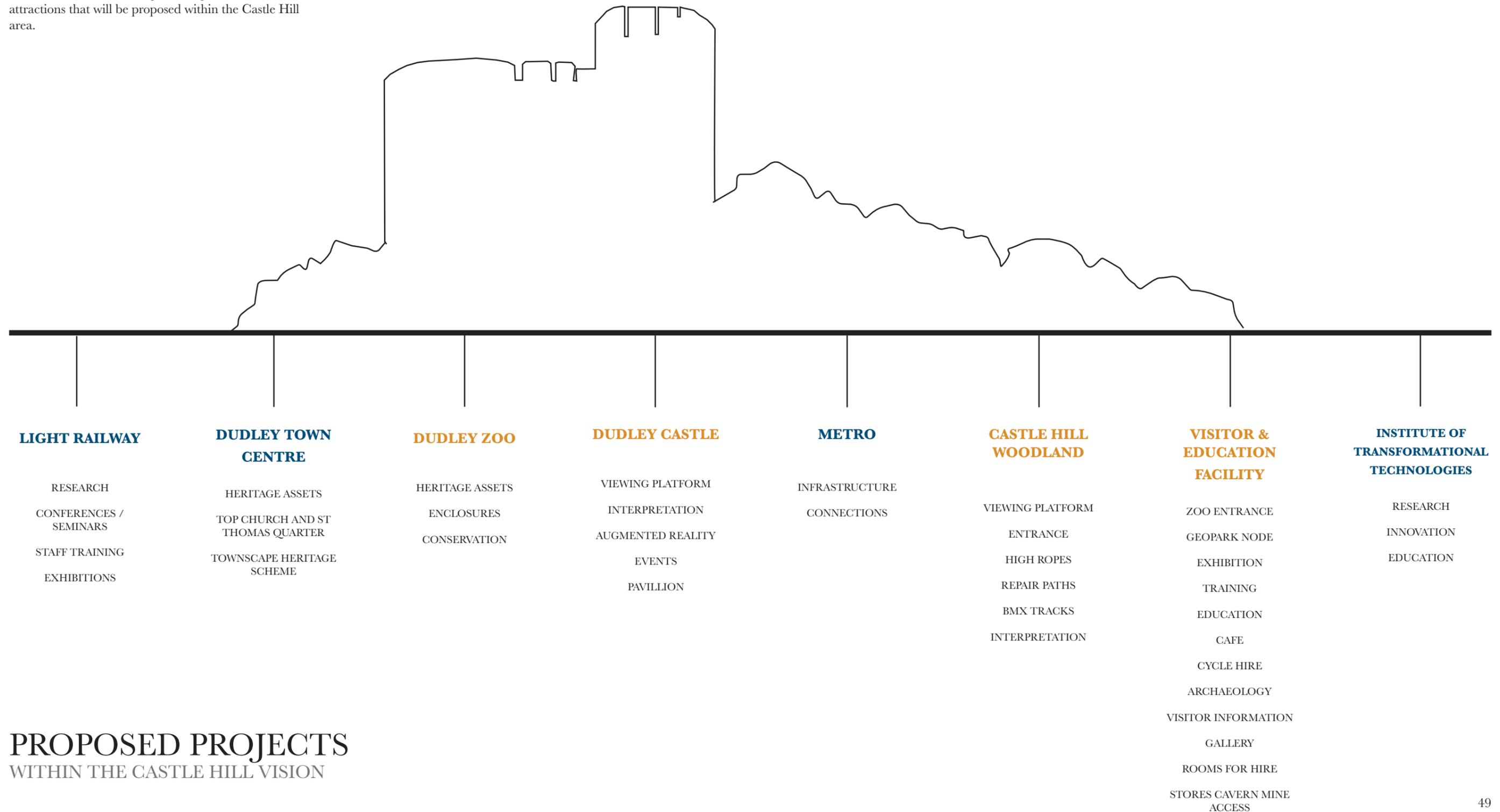
The site sits in a strategic position along the recreational route, future infrastructure and proposals will enhance this area bringing more footfall and the possibility for further attractions. The Castle Hill Vision seeks to enhance and concentrate attractions around the Midland Metro station.

4.0 Castle Hill Vision

4.6 Concept

4.6.3 Proposed Projects

Each proposed attraction provides differing assets to the area. In turn the proposed attractions below demonstrate this influx of possible spaces, events and attractions that will be proposed within the Castle Hill area.



PROPOSED PROJECTS WITHIN THE CASTLE HILL VISION

Intentionally Left Blank



5.0 The Projects

5.0 The Projects

5.1 Introduction

BPN's brief provided key outputs for each project, these are as follows:

- Develop the identified projects to create a masterplan with supporting evidence sufficient to support applications for external funding
- Have access to the specialist knowledge required to deliver this commission and will coordinate the input from others in the team.
- Ensure a detailed programme for developing and delivering the projects is produced, and agreed with the Project Team.
- Undertake all necessary consultations with stakeholders and information gathering to fully understand the requirements of the projects. This includes presenting the Castle Hill masterplan in context of the wider regeneration programme taking place directly adjacent to Castle Hill as well as within Dudley town centre.
- Investigate all sources of funding in addition to those listed in this document and assemble potential funding packages to deliver the projects.
- Make recommendations for other surveys that will be required for stage 1 funding applications in relation to each project.
- Provide outline costs (RIBA Stage 0/1) for each project.
- Report monthly, from the start date and at all critical points agreed at the inception meeting to the project team.
- The final documents are to be concise in content with an executive summary at the beginning. It should be written for a non technical audience and structured to reflect the separate projects.
- The Castle Hill Woodland report should be a standalone document



Aerial view of Dudley Castle and Woodland, image taken from Google maps

Following this format each project within this section of the report is broken down into historic information, current condition, site analysis, precedents, diagrammatic proposals, perspectives of each concept design completed with the following sections, costs, funding, programme and project specific issues that may affect timescales.

5.0 The Projects

5.1 Introduction

The projects that have been identified at this stage seek to respond to specific areas of development within the Castle Hill Vision developed in partnership between DZG & DMBC. This is not a definitive list of projects and more projects will likely be developed within the framework and masterplan as well as DZG's wider development brief. These initial projects have been identified as responding to an immediate need and response to issues within the overall vision.

- CASTLE
- VISITOR & EDUCATION FACILITY
- STORES CAVERN MINE
- THE LODGE
- GIRAFFE HOUSE
- QUEEN MARY
- DISCOVERY CENTRE
- ELEPHANT HOUSE
- TROPICAL BIRD HOUSE
- WOODLAND
- SOUTH GATEWAY

DZG aim is to, 'To inspire and excite people in the natural world, in the history and geology of the site on Castle Hill, and to encourage and promote a better understanding of and support for conservation of nature and our heritage. . .'



Diagram highlighting the proposed projects across Castle Hill

Intentionally Left Blank



6.0 Castle

6.0 Castle

6.1 Existing

6.1.1 Introduction

Dudley Castle is a Grade 1 listed building and a Scheduled Ancient Monument.

The Castle is regularly maintained and during the 1980s underwent a partial repair programme. That notwithstanding areas of the structure have over the past 30 years deteriorated leading to areas of the courtyard and the Sharrington Range being closed off to the public as a precautionary health and safety measure. In 2015, the Zoo, commissioned the ST Walker & Duckham (now Purcell) again to undertake a condition survey and costings in order to gauge the extent of deterioration, the costs equated to £2,678,000 (inc VAT). The findings were shared with Historic England and the Council.

In addition to this further funding, the Heritage experience requires further development to engage with a wider audience and present a sustainable vision.

Due to its location within a Zoo setting, Dudley Castle offers opportunities for visitor engagement to a non typical Heritage audience. This could potentially widen the visitor demographic when compared to other conventional Castle attractions.

A core group of stakeholders have already been approached and include Historic England, Dudley Council and the Friends of Dudley Castle.



Panoramic of Dudley Castle Courtyard in 2015.

6.0 Castle

6.1 Existing

6.1.2 Stage 1 Assessment

BPN have worked in collaboration with Donald Insall Associates (DIA) to define the conservation repairs proposed for Dudley Castle. Donald Insall Associates were appointed as a sub consultant with the specific task of assessing the Castle. A CoBRA Stage 1 Assessment was carried out to study the Castle fabric, key issues and opportunities, accessibility of the Castle, the need for future work and future events and activities.

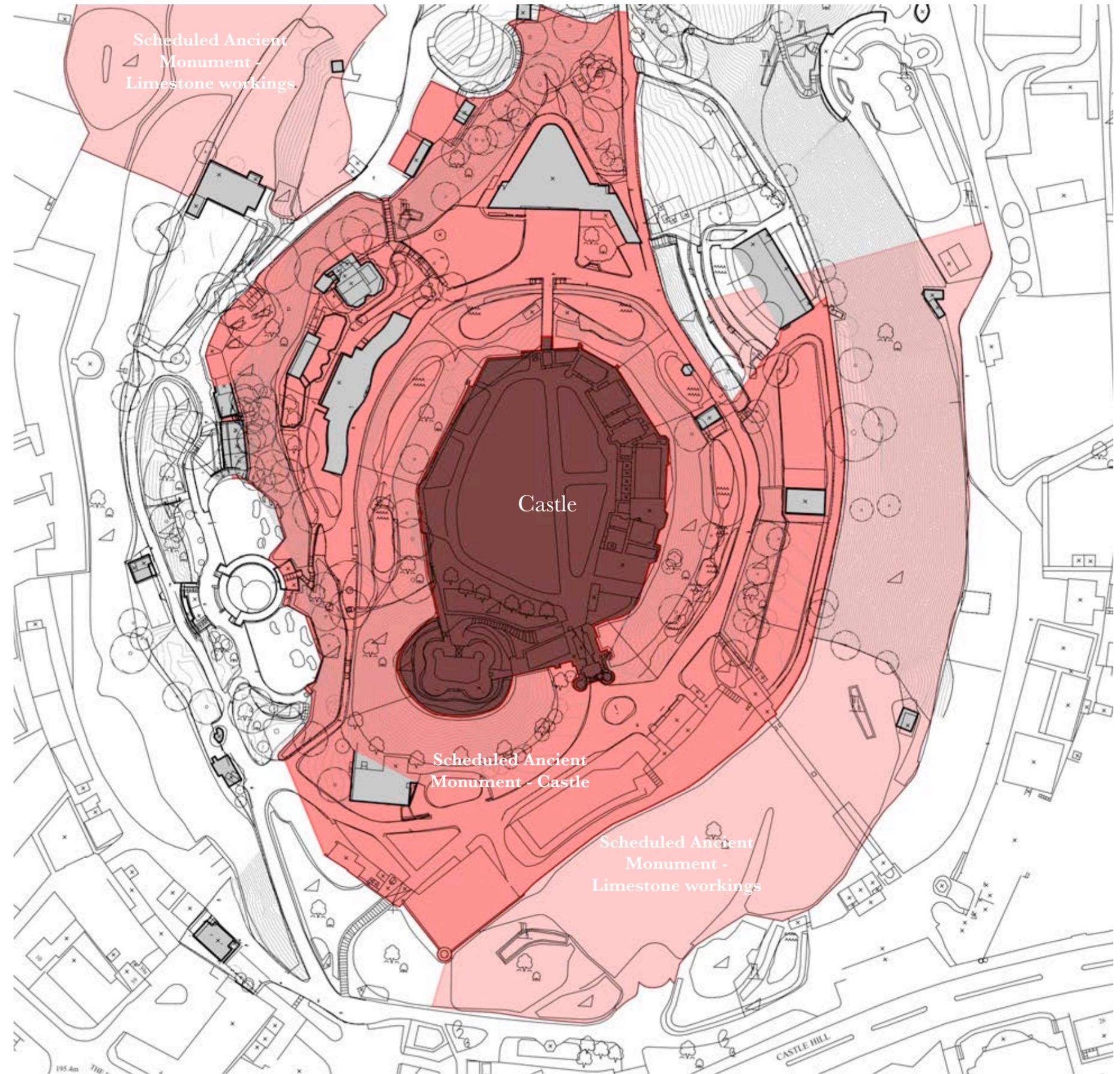
Over the past century research has been undertaken in respect of Dudley Castle combined with substantial survey, on the condition of the fabric and associated costs. In 2015, a significant survey was undertaken by Purcell which has informed the Stage 1 Assessment. DIA performed further inspection, building on the previous reports findings. DIA's assessment of the fabric provides an overview to allow further research to be commissioned and reasonable quantification of the risks and costs of future maintenance.

Dudley Castle should be recognised as a ruin and more than any other buildings will be in constant decay through the action of weathering. A designated heritage asset should be supported by an appropriate routine of management and maintenance and it has been advised that funding be sought for the preparation of such a document which takes into account: natural weathering and decay, management of maintenance and repair, landscape design, trip and falling hazards and cost.

In order to secure the long term use of the Castle, significant investment is required to undertake further research, development of skills, and capital repairs. This will require grant funding, and development of revenue generating facilities to create a sustainable enterprise.

DIA's report sets out potential activities which would support the Castle directly and support maintenance costs by attracting revenue and funding (through widening participation). Examples have been further expanded in the wider development report by BPN.

For more information please see Appendix A.



Existing Site Plan of Dudley Castle

6.0 Castle

6.1 Existing

6.1.3 History

Dudley Castle was constructed by a French knight, Ansculf of Picquigny in 1070 and first mentioned in the Domesday Book in 1086. Over the next few centuries the Castle was fortified and expanded although by the 17th century the Castle was in decline and after the English Civil War, the Keep, Gatehouse and various portions of the curtain wall were slighted. A fire gutted the Domestic Range in 1750 with no attempt being made to rebuild the Castle after the blaze and the remains of the Castle were left to settle into its role of romantic ruin.

Text taken from DZG Masterplan

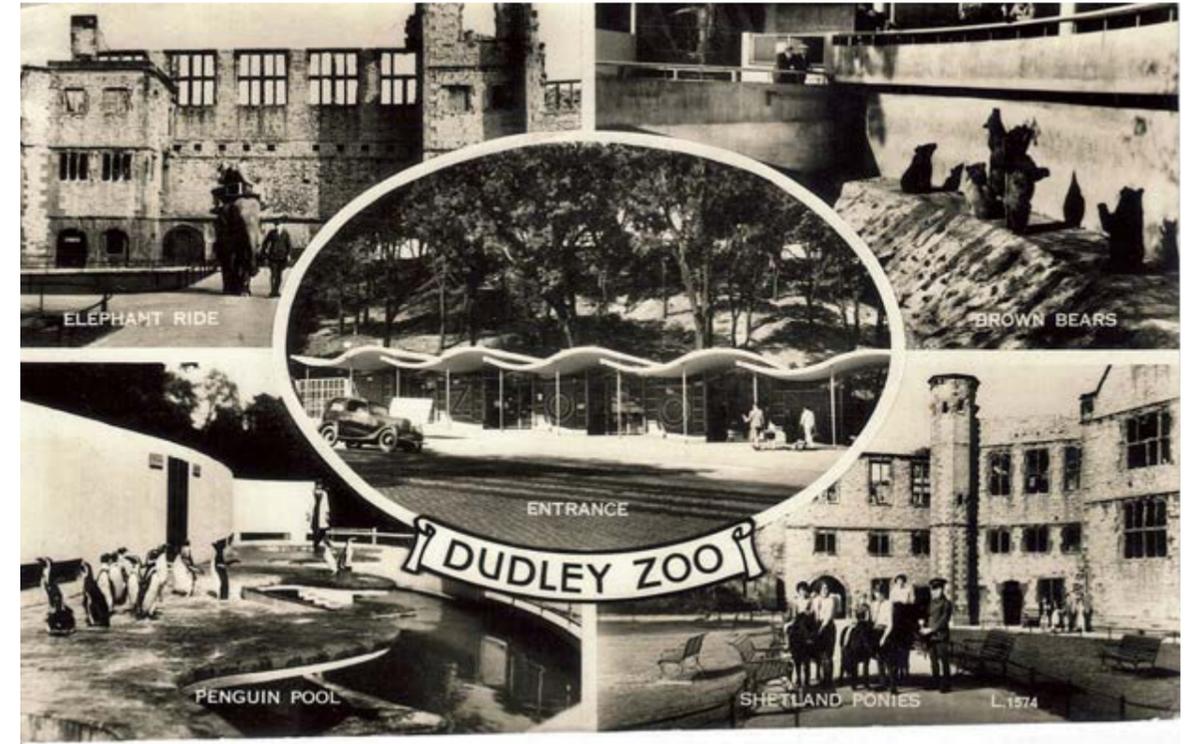
There were several major programmes of repair to Dudley Castle in the 1980's under the direction of ST Walker & Duckham, now part of Purcell, and subsequent condition surveys commissioned;

- 1979** ST Walker & Duckham appointed to carry out survey and report on condition following a fall of masonry which required the site to be closed.
- 1980** Report completed with recommendations to repair all historic structures to reduce deterioration and improve access.
- 1982-1984** Phase 1: repairs to Lower Gateway, Triple Gateway, Barbican and Keep.
- 1984-1985** Phase 2: repairs to North Gate, Stables, Lodging, West Curtain Walls, Garderobe and East Curtain Wall.
- 1985-1987** Phase 3: largest phase including repairs to service accommodation to C16 manor house, comprising Larder, Pantry, Kitchen, Servery and Buttery.
- 1987-1988** Phase 4: repairs to Great Hall with vault under Loggia.
- 1988-1989** Phase 5: repairs to C16 buildings comprising Chapel, Vaulted Cellars and adjoining chambers. Watch tower associated with Curtain Walls to south of Keep.

List taken from Donald Insalls Report



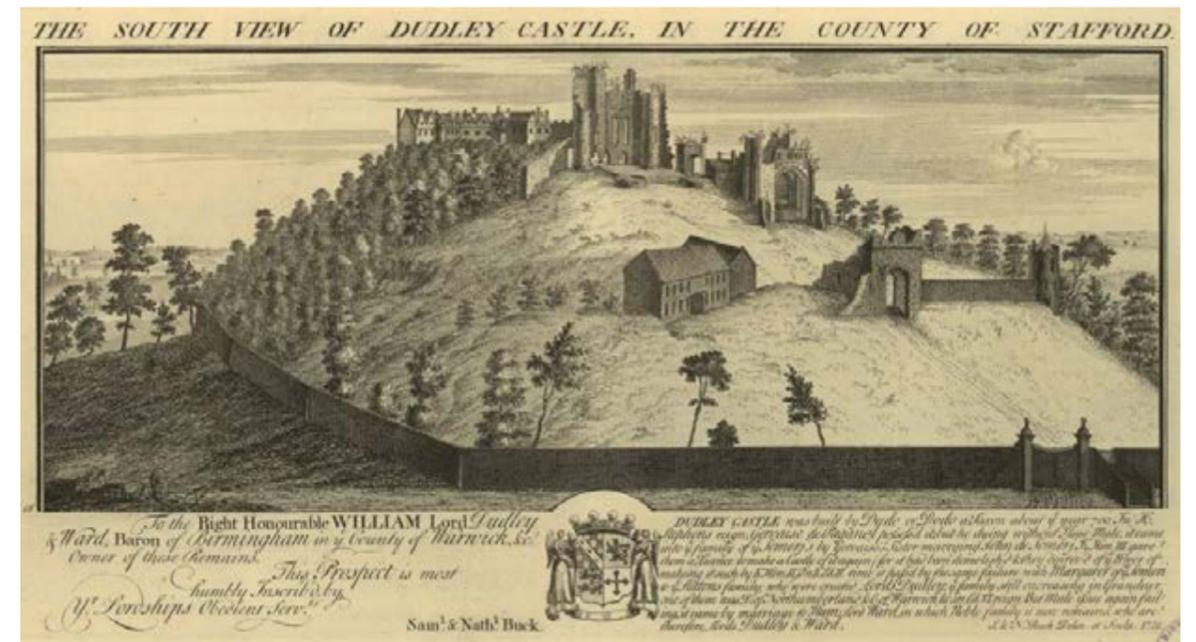
Aerial View of Dudley Zoo, 1939



Postcard of Dudley Zoo and Castle, 1937



Antique Print of Dudley Castle, Early 1800s



Samuel & Nathaniel Buck, Views of Ruins of Castles & Abbeys in England, Part 2, 1726-1739

6.0 Castle

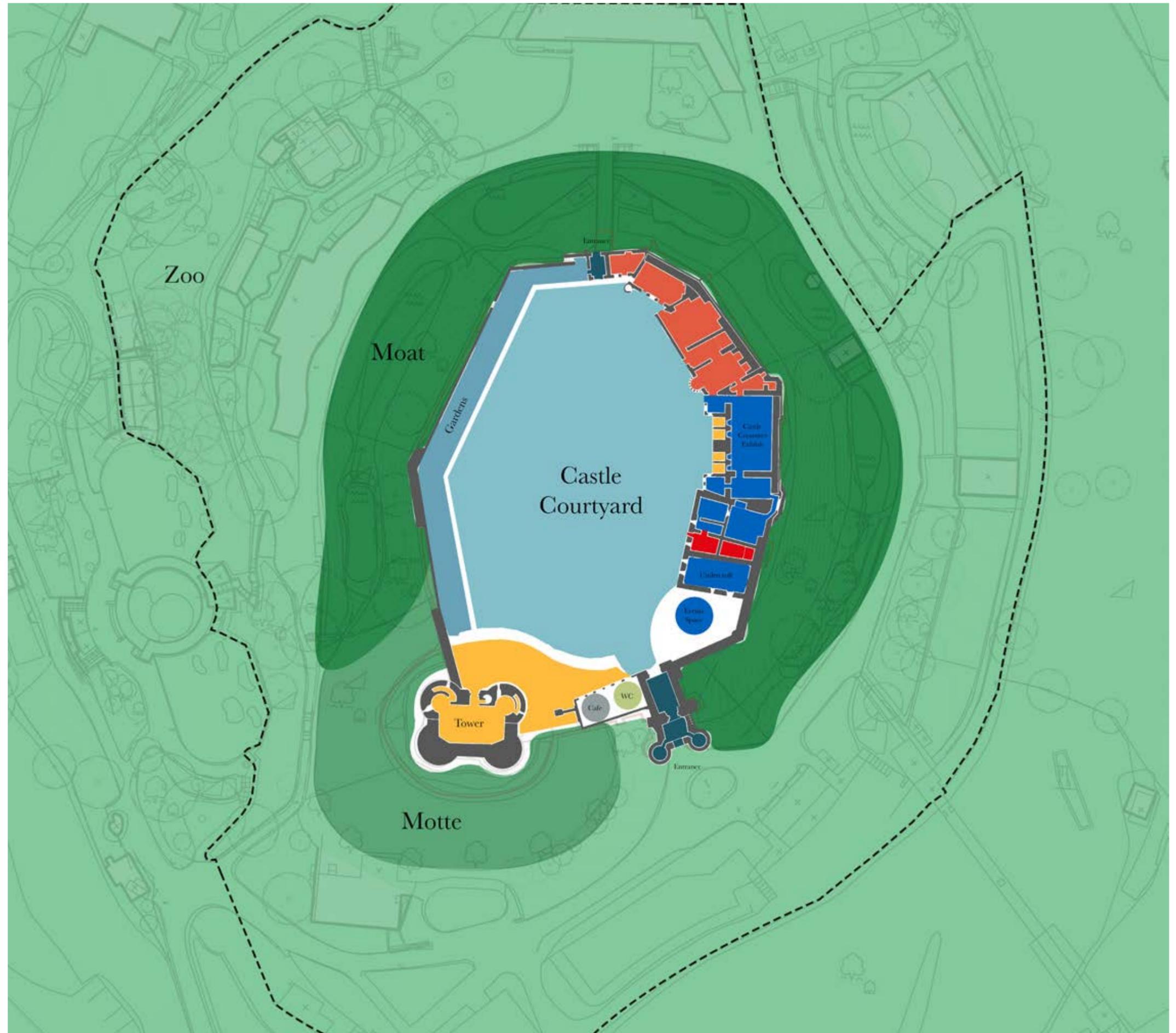
6.1 Existing

6.1.4 Use

The Castle is made up of a central courtyard, a peripheral existing building to the east wall, former Sharrington range and a tower to the south. The south contains a small structure which currently houses the toilets and a small tea room which service the Castle. In recent years an additional building has been provided within the courtyard to allow for events such as birthday celebrations. The Castle Creatures exhibit was also established within the ruinous walls of the Great Hall supported by HLF funding.

KEY

-  Walls
-  Cafe
-  Entrance
-  Events & Exhibitions
-  Courtyard
-  Gardens
-  WC
-  Zoo
-  Visitor
-  Temporarily Inaccessible since 2015
-  No Access
-  Scheduled Ancient Monument



Current Castle and its use

6.0 Castle

6.1 Existing

6.1.5 Access

A substantial amount of land is owned or operated by third parties for instance Dudley College and Holden's brewery to the west and south of the site.

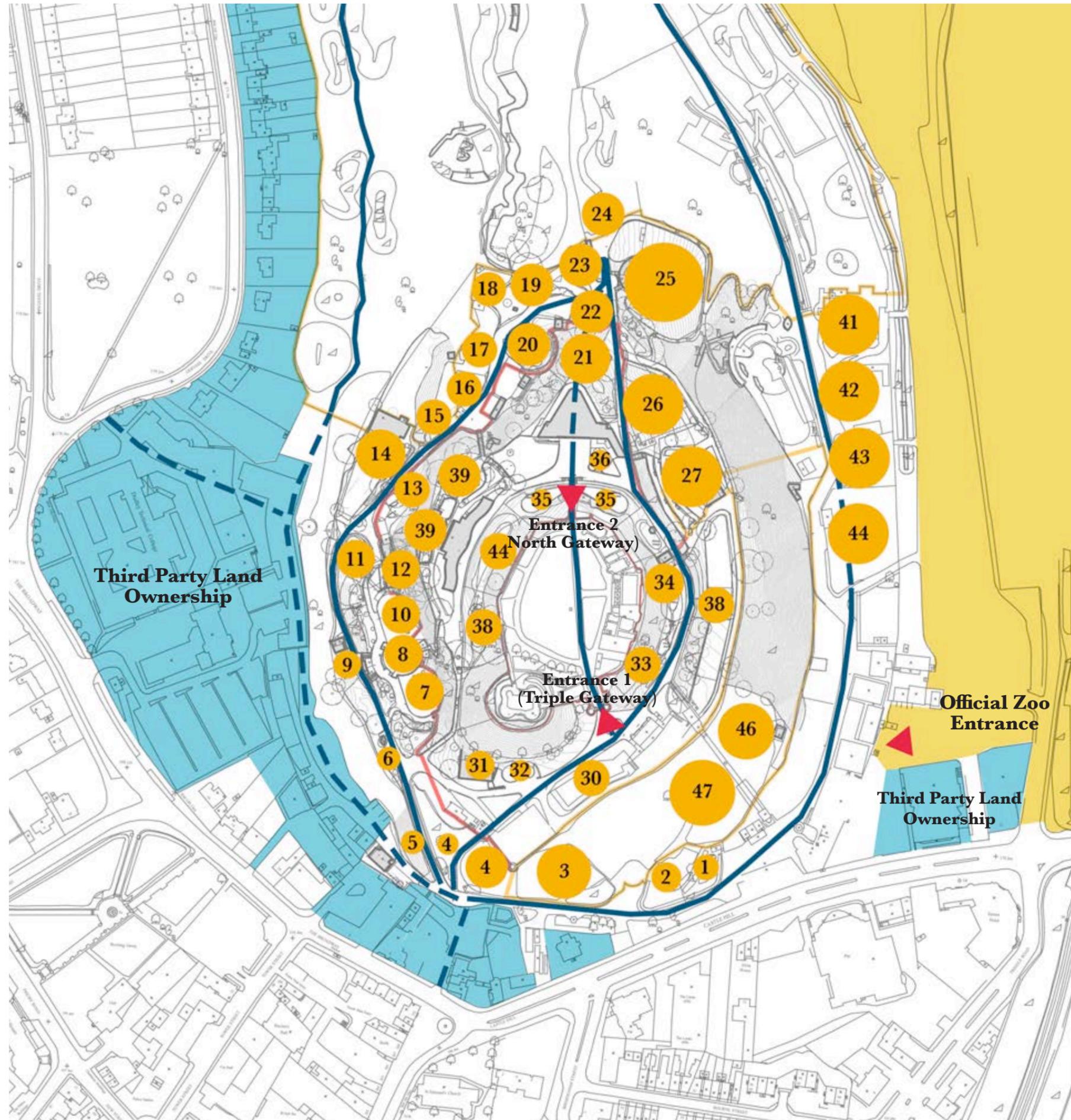
The Castle can only be accessed by two entrance points, the Triple Gateway and the North Gateway. A singular access to the Castle cannot be easily separated from the Zoo and it is not in the best interests of either attraction.

The Castle does not just consist of the central walls and courtyard, the Castle also consists of a motte and moat surrounding the base of the Castle walls, this is an integral part of the animal exhibits and therefore one cannot be seen without the other.

The historic paths around the site are indicated on the diagram in blue. These have slowly been eroded where land ownership is within a third parties demise. This has disrupted the possibility of a complete route around Castle Hill.

KEY

- Zoo Exhibits
- ▲ Entrance Points
- Missing Paths
- Existing Paths
- Zoo Ownership
- Third Party Ownership
- Scheduled Ancient Monument (Castle)
- Scheduled Ancient Monument (Limestone remains)



List of Enclosures

1. Flamingo falls
2. Colombian Spider Monkeys
3. Gelada Baboons - Bachelor group
4. Owls
5. Raven
6. Kookaburras
7. Howler Monkeys
8. Asiatic Black Bear
9. Snow Leopards
10. Sumatran Tigers
11. Bushdogs
12. Lynx
13. Red pandas
14. Giraffes
15. Capybaras / Mara
16. Tapirs
17. Anteaters
18. Kangaroos
19. Aviaries
20. Barbary Sheep
21. Tortoise
22. Otters
23. Parrot Aviaries
24. Lemur Wood
25. Asiatic Lions
26. African wild dogs
27. Organutans
28. Peccaries
29. Reindeer
30. Wallaby walkthrough
31. Reptile world
32. Meerkats
33. The great crested newt project
34. Gibbons
35. Sea Lions
36. Pheasants
37. Waterfowl
38. Penguins
39. Monkeys
40. Red Squirrels
41. Chimpanzees
42. Lorikeet Lookout
43. Down on the farm
44. Camels
45. Playground
46. Gelada Baboons
47. Macaques on the bank

Diagram of Zoo exhibits, historic paths, land ownership and access points

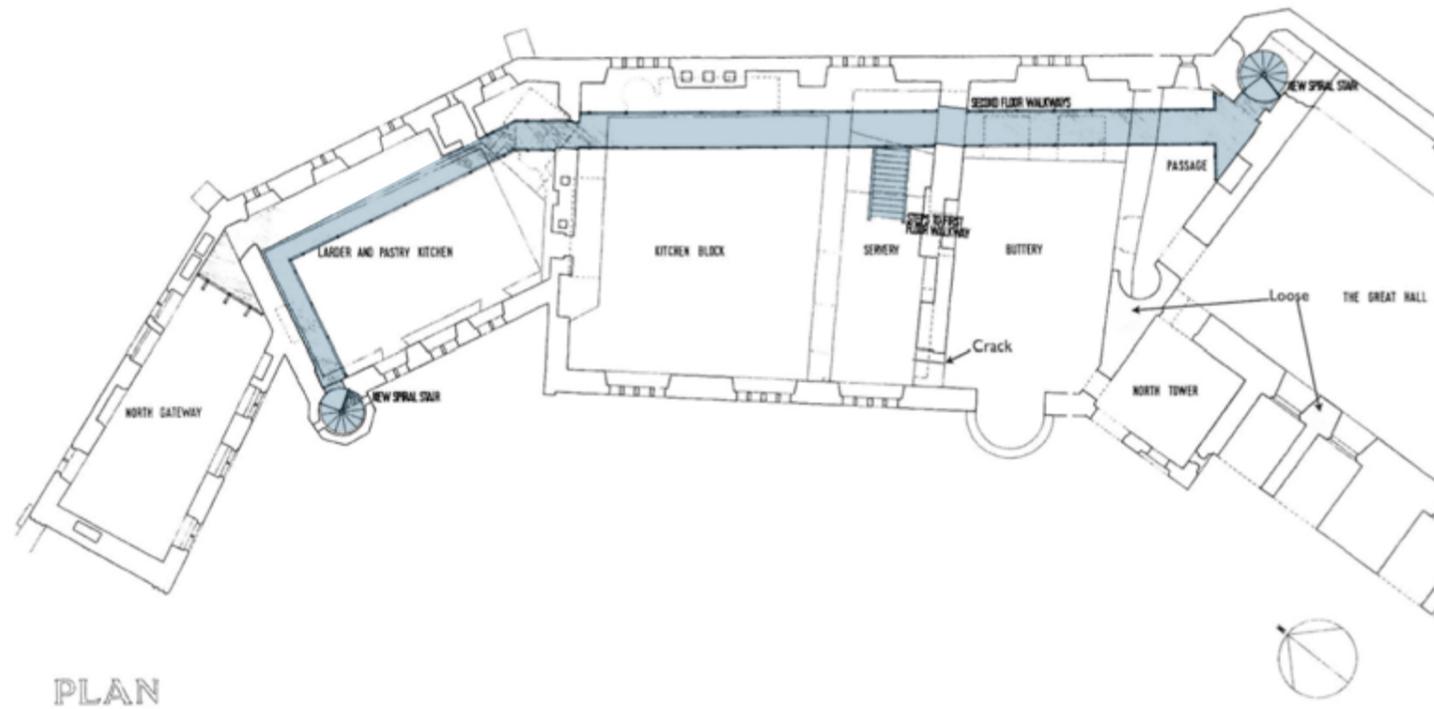
6.0 Castle

6.1 Existing

6.1.6 Previous Proposals

As part of the original proposals produced by Purcell in 2015, a walkway was designed within the walls of the north gateway. The proposal was a high level walkway to peer into the spaces below which cantilevered off the existing fabric. The walkway concept originated from ideas formulated in the 1980s/90s.

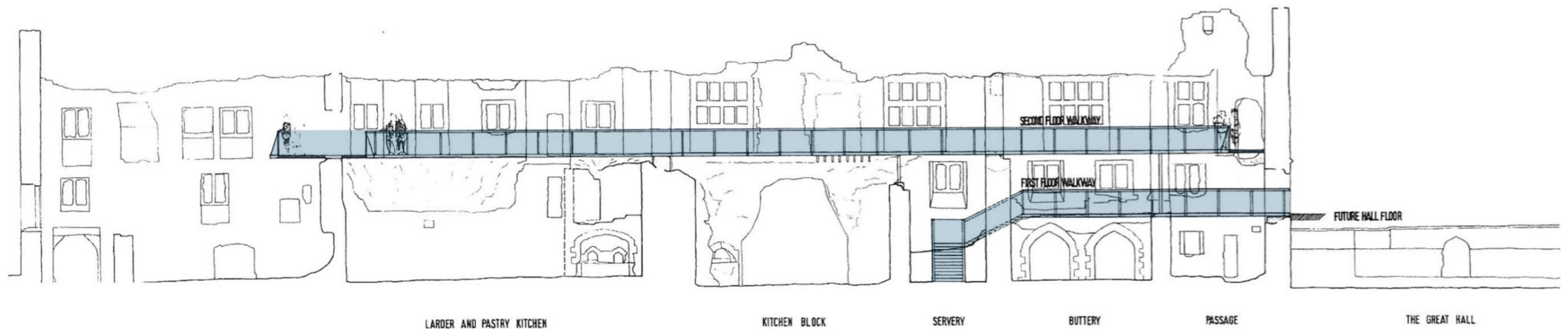
The current view of this approach is that it would impact greatly upon the historical remains of the Castle.



Purcell's original plan for the walkway through the northern edge of the castle



Front cover of the Dudley Castle Condition Survey in 2015



INTERNAL ELEVATIONS (EXTERNAL PERIMETER WALL)

Purcell's original elevation for the walkway through the northern edge of the castle

6.0 Castle

6.2 Concept

6.2.1 Interventions

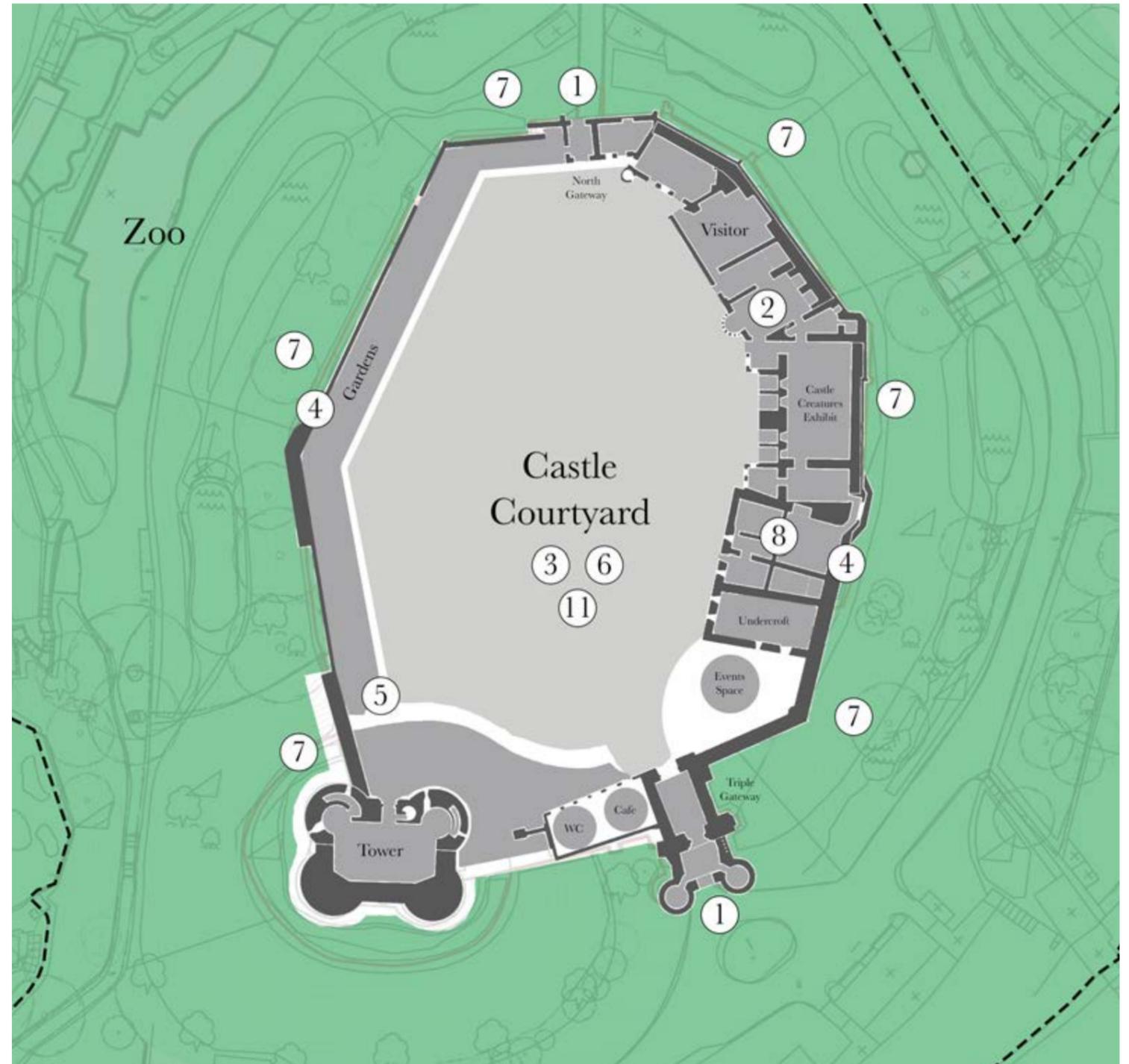
The Castle Hill Conservation Area Character Appraisal describes the Castle and its environs in great detail and it provides a useful summary of key opportunities for enhancement. Building upon this work further a number of interventions have been identified across the Castle that could improve its functional use and appeal. They could support existing events and widen the range of activities on site to the extent that the Castles heritage could be marketed alongside the Zoo.

1. North and Triple gateways to repaired to allow safe access into the Castle
2. Provide a tower within the historic Castle remains that contains interpretation, archaeological finds and access to a viewing platform.
3. Cohesive soft and hard landscaping treatment which provides a coordinated approach to the landscape design. This includes landscaping, wayfinding and presentation
4. Remove vegetation from the external walls, to expose the full extent of the Castle within the grounds and allow for repairs to be undertaken and further removal to allow vistas to the Castle from outside the grounds.
5. Proposed pavillion to be used for events
6. Interpretation booths to be used by the Zoo and Castle
7. Through a greater understanding of the historic significance of the surrounding tree canopy on Castle Hill, vistas can open up key views to Dudley and its surrounding
8. Explore opportunities to restore access to the loggia and great hall, great chamber and chapel thereby enhancing the visitor experiences of how the buildings and the upper floors functioned whilst also providing key views eastward from the great bay window in the great

hall. This would make a significant contribution to visitor experience and would attract a different type of visitor to the site.

9. Formal publication of the Castle excavations is required. Whilst there are a number of different journals and periodicals the material needs to be drawn together into a formal publication that promotes the understanding and appreciation of the archaeological interest of Dudley Castle. This will form completion of the post excavation on Dudley Castle. Creation of a 3D images of the key Castle finds could also be explored.
10. A series of complementary activities need to be devised that will promote the Castle and its historic connection with Dudley Town centre.
11. Provide fixing points across the Castle courtyard to allow future events to be provided without applying for scheduled ancient monument consent, proposed locations will be subject to detailed design.

The visitor demographic to the Castle varies compared to conventional Castles due to its location within the Zoo therefore the interventions are to be developed with existing visitors in mind but also with the ambition to attract a wider range of visitors including some who may wish to visit the Castle in preference to the Zoo.



Indicative diagram demonstrating the interventions in and around Dudley Castle



Pavillion

Provide a sympathetic but confident visual counterpoint to the historic structures for visitors to dwell and watch events within the Castle courtyard.



Interpretation Pods

Interpretation pods are moveable temporary structures that have minimal impact on the historic significance. Within the Castle the pods will assist events, provide a location for augmented reality and provide information and interpretation adapting to the needs of the Castle and the proposed events



Platforms

Create a free standing tower within the Castle ruins to allow access and views at higher levels, perhaps replicating historic floors to allow a greater appreciation of what life may have been like inside the Castle. Interventions could be extended over subsequent years, providing an ever changing facility connecting walkways and other routes of movement through the site.



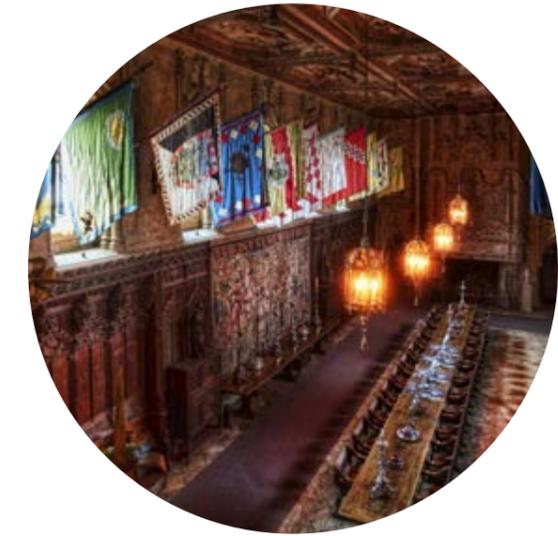
Lighting

Architectural Lighting of the Castle would be advantageous to enhance its visibility in the area and underline its significance in terms of Dudley's Town Scape. The Castle has intangible but real value in marketing Dudley's status as a town within the Black Country. Lighting and consideration of views from outside and within the Castle would enhance its value as a visitor attraction at night for events..



Events

DZG currently operate a range of events, including outdoor cinema, guided tours, weddings, film shoots and St George's Day events, the proposal seeks to expand and enhance this portfolio of events including; markets, fayres, and conservation talks.



Augmented Reality

Linked to the Interpretation Pods, Augmented Reality could be used to allow visitors to appreciate the historic form of the Castle and Dudley through various periods of its history – views could be recreated that would be accessed via a mobile phone app. Signage would be used to indicate where views could be accessed – this could be linked with an audio tour or interactive guide to structure visits.



Pavillion



Interpretation Pods



Platforms



Viewing Towers



Events



Augmented Reality

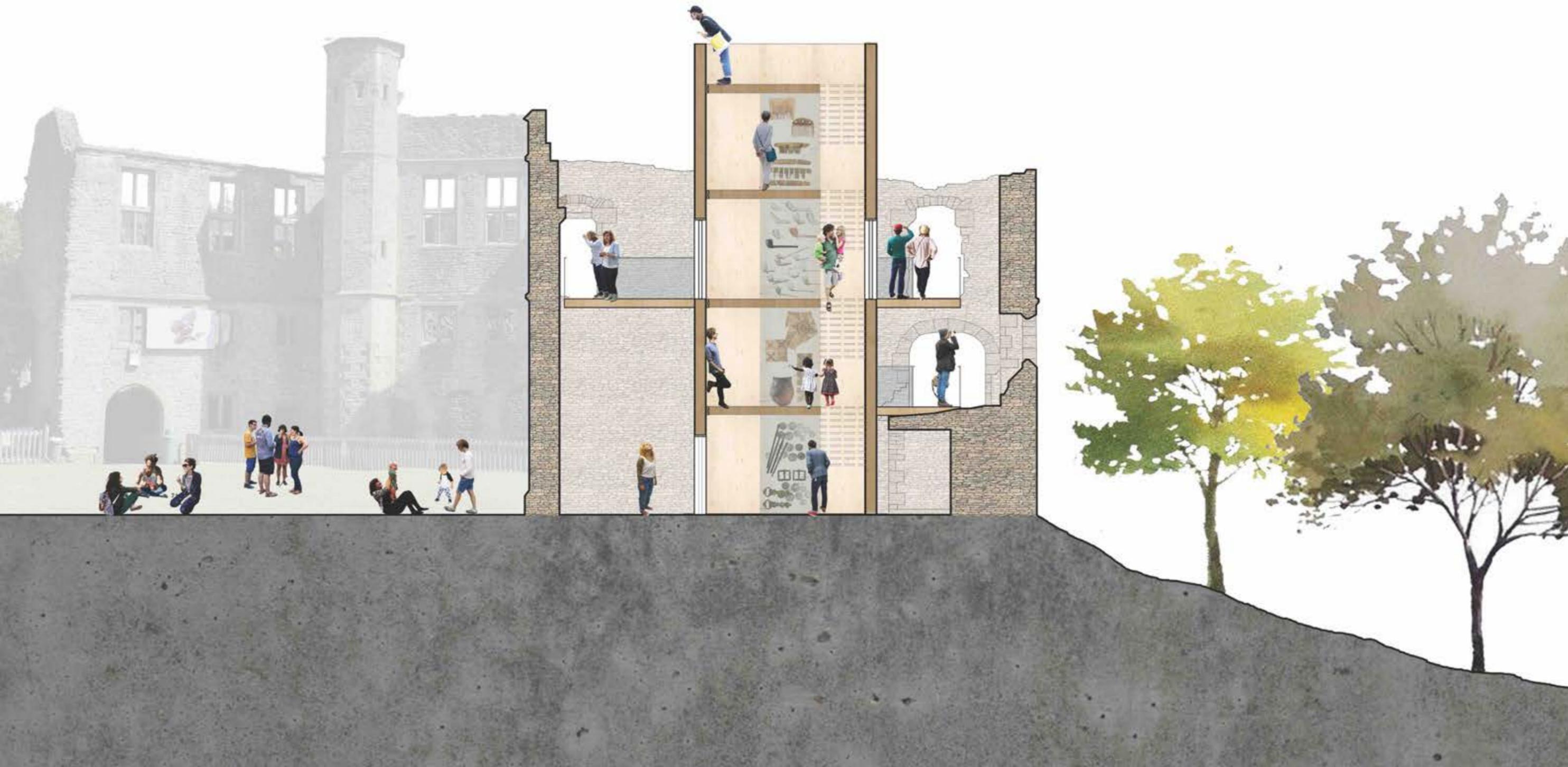
6.0 Castle

6.3 Proposals

6.3.1 Tower Section

The proposed tower sits within the historic buttry, the scheme will house a winding staircase with a centralised lift, to ensure the tower is fully accessible. The tower will rise above the height of the surrounding ruins and at each floor archaeological artefacts that have been gathered from within the Castle grounds will be housed within displays alongside interpretation.

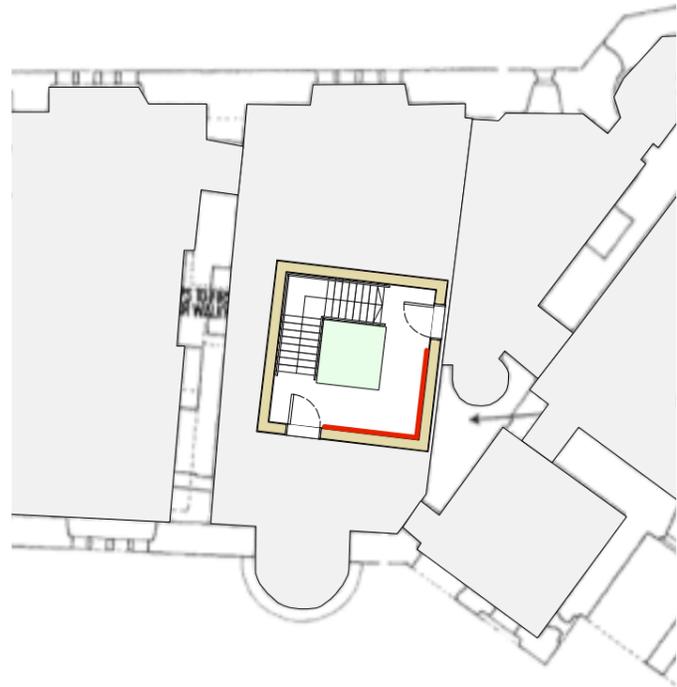
It is proposed that each level will contain platforms reaching out into the original doorways and window arches of the Castle ruins. Platforms will provide augmented reality hot spots which will allow visitors to explore the Castle in its original form through digital representation. The tower sits as a independent folly within the grounds and can be securely shut overnight. It will offer wider views of the borough from a building unused for over 200 years.



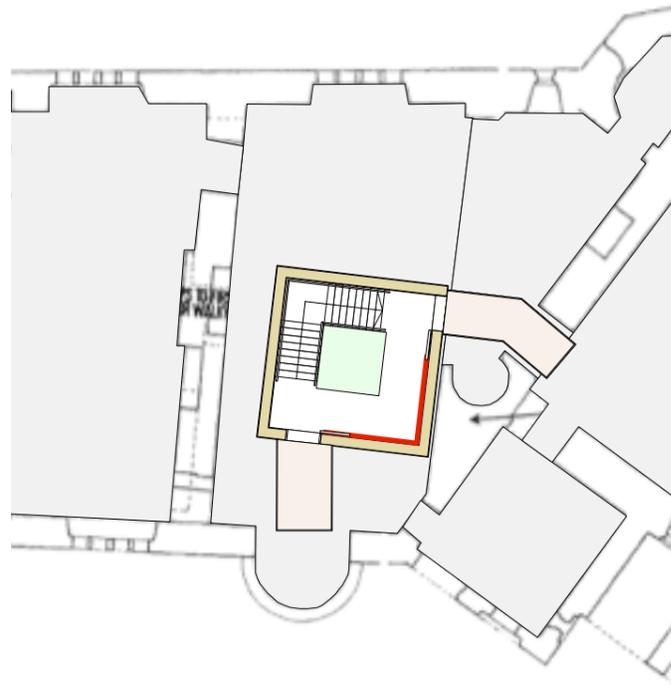
6.0 Castle

6.3 Proposals

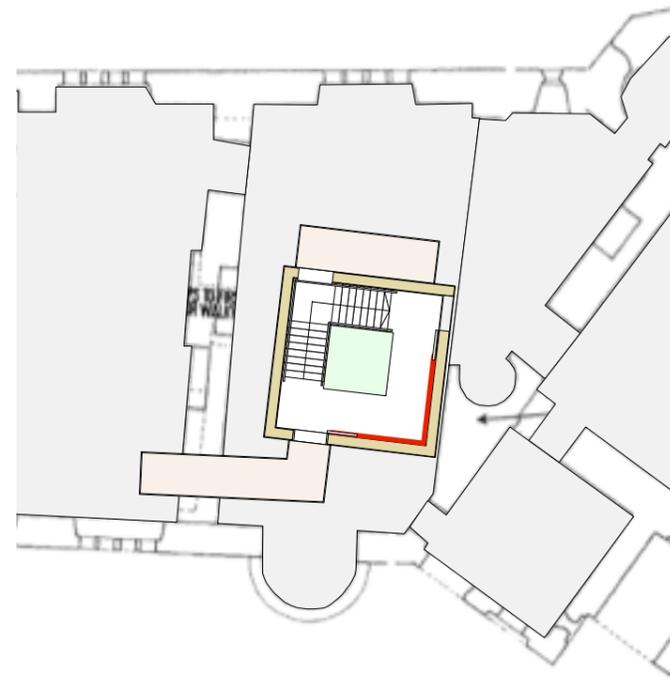
6.3.2 Tower Floor Plans



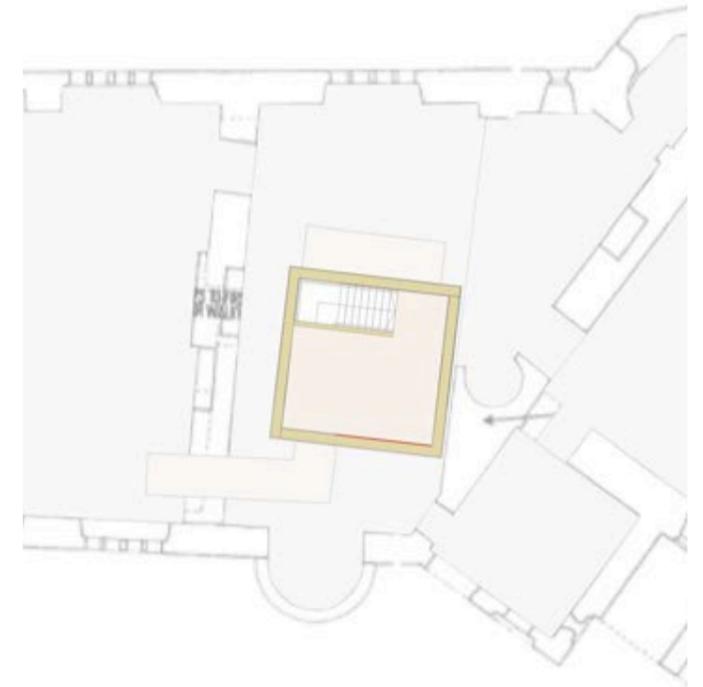
GROUND FLOOR PLAN



FIRST FLOOR PLAN



SECOND FLOOR PLAN

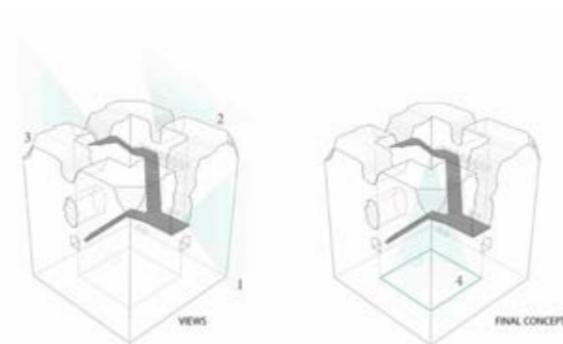


ROOF PLAN

6.3.3 Future Expansion

The highlighted hatch areas signify the future walkways allowing potential for extension from the tower. The red dashed lines indicate the lines of structure improving the structural stability of the Castle ruins and allowing greater access to the upper floors within the Castle fabric.

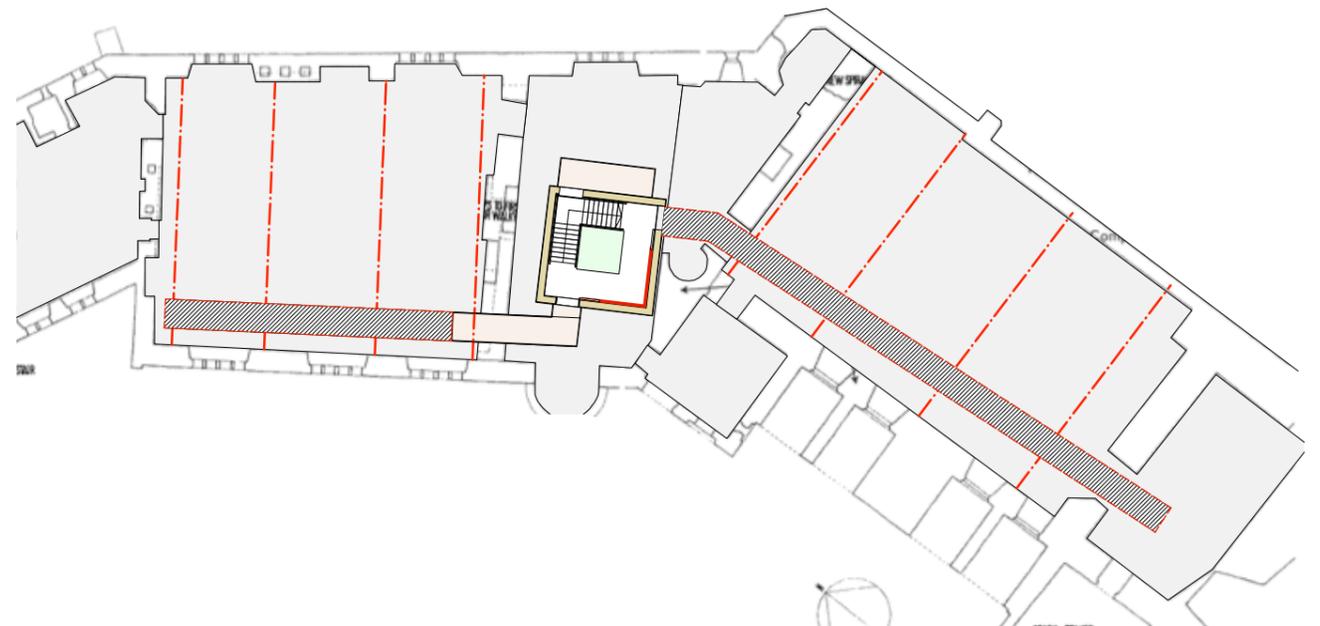
A similar proposal has been successfully completed in 2016, the Kalo Tower in Ronde, Denmark by MAP Architects and Mast Studio allows access to one of Denmark's archaeological gems. Previously inaccessible, the visitor can enter and climb the main space, viewing the archaeological layers and explore the surrounding landscape through openings and landings at varying levels.



Axonometric and plan of Kalo Tower, Ronde, Denmark



Image of Kalo Tower, Ronde, Denmark



Proposed tower plan including future walkway extensions

6.0 Castle

6.3 Proposals

6.3.4 Archaeology

Dudley Castle has been a significant part of English history from the coming of William the Conqueror to the Civil War. This history makes it a significant site for Archaeological excavations, over the last few decades various archaeological digs have been occurred. Between 1980 - 1990 the whole of the Castle fabric was restored in a series of phased initiatives coordinated by Dudley Zoo Development Trust. To aid the restoration programme a series of excavations were undertaken within the Castle grounds. During 1983 - 1988 a successful excavation programme between Dudley Zoo Development Trust and Dudley Castle occurred.

The archaeological excavation concentrated on the motte, within the adjacent stable block, between the stables and main gateway, the ditch separating the motte from the bailey, the great chamber, and the chapel. Large quantities of finds were recovered including ceramic building materials, clay pipes, coins, fauna remains, floor tiles, leather, plant remains, pottery, small find, stone architectural fragments, vessel glass, window glass, textiles, etc. In addition to the excavations, a substantial amount of building recording was carried out in association with the restoration of some of the standing buildings. The photos displayed on this page were taken during this excavation.

The undertaking of excavation at the Castle was only possible through the granting of "Scheduled Monument Consent" this was granted on the basis that Dudley Council formally adopted a strategy for post excavation research and the long term duration of excavated material. It was decided by the planning and Architecture Department that the department would fund the research and write up a publication. The excavations were written up in 1993, containing 3 volumes if interpretive material.

The Archaeological digs concluded that there intention was to adapt part of the restored buildings in the Bailey to accommodate an on site museum and interpretation centre.

While considerable research has been undertaken on the Castle this has not yet been consolidated into a single form, this provides an opportunity for this task to be undertaken by future archaeologists.

Various publications and dissertations have been produced that include Dudley Castle within the content. See list of publications below:

1983-1985

Dudley Castle Archaeological Project, An introduction and summary of excavations 1983-1985

1993

Volume 1
Background Information and Proposed Design for Research and Publication, Dudley Castle Archaeological Project
Dudley Metropolitan Borough Council

1993

Volume 2
The Excavations, 1983-93 Stratigraphical Analysis, Dudley Castle Archaeological Project
Dudley Metropolitan Borough Council

1993

Volume 3
The Finds, Dudley Castle Archaeological Project
Dudley Metropolitan Borough Council

1994

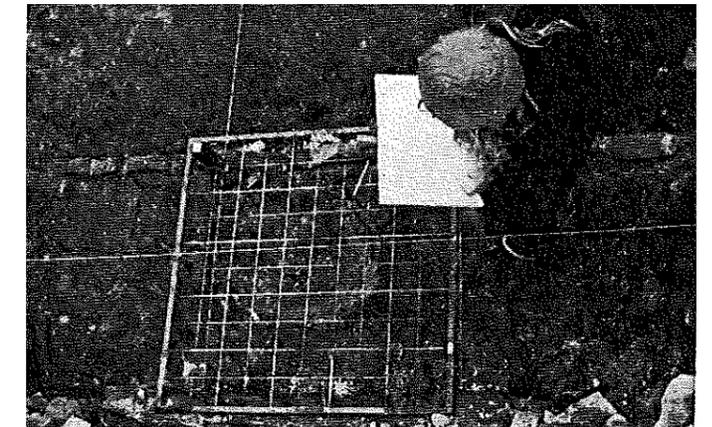
-
The interpretation of Dudley Castle, Proposed Master Plan
Publisher : McAndroids Limited

2005

Contemporary and Historical Archaeology - University of Leicester
Zoo Archaeology, Improvement and the British Agricultural Revolution
Richard Thomas

2007

Department of Archaeology - McDonald Institute for Archaeological Research
Changes in Cattle Breeds after the Bubonic Plague: Evidence from Ancient Micro satellites
Michael Campana



Images taken from the excavations in the 1990s



The three volumes produced from the excavations in the 1990s

6.0 Castle

6.3 Proposals

6.3.5 Landscaping

The Castle's situation with the Zoo is a key aspect of the Castle Hill's character and sense of place. A more coordinated approach to landscape design (soft and hard, as well as fences, barriers, benches, litter bins) would be beneficial. Landscaping should be suitably sympathetic, while appropriate to the Castle's general audience.

The Castle Hill could benefit from a wider heritage appraisal to chart the major changes in landscape during its various uses through the years. From stronghold, country home, industrial landscape, pleasure garden and public facility to zoo and visitor attraction.

Integral to a Landscaping strategy would be a Tree Management Strategy across the site. Self-seeded woodland means that trees within the Zoo are blocking view to and from the Tecton buildings or views of the Castle. A Tree Management Strategy would help promote a strategic programme of work and reduce the need for repeated notification to the Council. It would be especially helpful to identify historic trees that were planted deliberately as part of the 'designed' pleasure grounds landscape and ones which are self-seeded and harmful to the setting of heritage assets.



Print of Dudley Castle, 1785 taken from PicClick

6.0 Castle

6.3 Proposals

6.3.6 Costs

The building works for the Castle have been presented as a separate cost plan by PMP Consultants. The building works list is based on the original order of estimate produced by Austin Newport in 2015. This allows the schedule of works to be easily itemised against the original survey. Donald Insalls findings have been added against each building demonstrating the further decay below is the final total for the conservation works:

The overall project cost of Conservation Repairs:

£2,509,832.69 (Excluding VAT)

Please refer to Appendix D for cost breakdown of the conservation repairs.

The opportunities highlighted within this document have been costed separately within the Castle Hill vision cost plan, the proposals include: the tower, augmented reality, a pavillion, interpretation booths and external castle wall lighting. The extension to the tower has been added as a future additional has been seperately costed.

The overall project cost of Conservation Interventions:

£933,817.51 (Excluding VAT)

Project cost of additional tower extension:

£114,000 (Excluding VAT)

Please refer to appendix C for cost breakdown of the conservation repairs.

Overall Cost:

£3,557,650.20 (Excluding VAT)

6.0 Castle

6.3 Proposals

6.3.7 Funding

This project comprises core conservation repairs and a range of options for additional elements, including a new-build access tower; an augmented reality experience; an events pavilion/space; interpretation booths and external lighting. In total these additional elements, plus potential expansion of the walkway, is costed at some £3.558m.

Not included in this estimate is provision for analysing and disseminating the results of all archaeological work to have been undertaken on the monument since 1983 so that the public might benefit from access to this valuable but so far little used resource. There is also an opportunity for the associated finds (currently in storage at Himley Hall) to be presented in a more accessible format, such as a 3D digital archive.

The key to unlocking funding for the Castle will be if:

1. It is placed on the Historic England Heritage at Risk Register
2. Historic England are reassured that Dudley Council's revenue grant to DZG (which is predominantly used for Castle upkeep) is protected and further DZG funding is ring-fenced for long term asset maintenance to provide confidence that post any substantive capital investment the structure is kept in good order

Progression with (1) and assurance with regard to (2) could then make the project attractive to both HE and HLF. For both funders, strong community buy in, volunteer and apprenticeship involvement and a distinctive approach that set this project apart from numerous other castle restoration ventures would be required. Could the approach adopted at Guedelon in France – 'How do you build a medieval castle?' <http://www.bbc.co.uk/programmes/b04sv5nc> be drawn on? The archaeological elements of the project could form a significant part of the project and would benefit from early identification of a partner to work with.

The nature of the project is such that phasing (potentially over five to ten years?) Could be realistic, which may appeal to funders.

The project could also appeal to some Trusts and Foundations.

	£000's	HLF	WMCA/ BCLEP	HE	ERDF	T&F	Pvte
Tectors Phase 2	2,015	/		/		/	
Giraffe House	1,030		/			/	
Stores Cavern	756	/	/			/	
Visitor and Education Facility	3,844		/			/	
Round House/Lodge	78	/	/			/	
Dudley Castle	3,558	/	/	/		/	
Woodland Management	1,425	/	/		/	/	
Woodland Platform	187	/	/		/	/	
High Ropes and Forest Coaster	500						/
Total Cost	13,393						

Note: Table excludes VAT, professional fees, construction inflation, capital allowances, land remediation, risks, relief, grants, etc. For breakdown of costs please refer to the appendices.

6.0 Castle

6.3 Proposal

6.3.8 Project Specific Issues / Proposed Programme

Building upon the contents of the Castle Hill Conservation Area Character Appraisal, a Conservation Management Plan needs to be prepared for the Castle setting out a framework of policies that will enable decisions to be made between the Statutory agencies such as Historic England and Dudley Council (who acts as both Landlord and the local Planning Authority) and DZG on how best to look after the Castle whilst ensuring it continues to be used, enjoyed and made accessible. The document will include proposals for streamlining the consent process for routine maintenance and repairs to the Castle fabric, such as Heritage Partnership Agreements.

Adjacent we have provided timescales for each RIBA work stage for the proposed the Castle Conservation Repairs and Interventions:

Castle Conservation Repairs

RIBA Work Stages

Stage 0 - Strategic Definition

- Completed during development of funding document

Stage 1 - Preparation and Brief

- Completed during development of funding document

Stage 2 - Concept Design

- 4 weeks to develop proposals

Stage 3 - Developed Design

- 20 weeks for the production of drawings
- 13 weeks for statutory consent

Stage 4 - Technical Design

- 8 weeks to produce technical drawings
- 4 weeks for tender

Stage 5 - Construction

- 72 - 144 weeks in construction

Stage 6 - Handover and Close Out

- 4 weeks for fit out and interpretation

Total predicted timescales: 197 weeks

Project Specific Issues

Pre - application discussions - Historic England, LPA
Consent - Scheduled Monument / Planning / Listed Building
Reports - Ecology / Structural Survey / M&E survey / Drainage Survey / Conservation Management plan / Building Fabric Condition Survey / Archaeology / Maintenance Plan
Other - Site access / Retention of existing uses / access. Perimeter access for surveys, Potential for wide consultation.

Castle Conservation Interventions

RIBA Work Stages

Stage 0 - Strategic Definition

- Completed during development of funding document

Stage 1 - Preparation and Brief

- Completed during development of funding document

Stage 2 - Concept Design

- 4 weeks to develop proposals

Stage 3 - Developed Design

- 12 weeks for the production of drawings
- 13 weeks for statutory consent

Stage 4 - Technical Design

- 12 weeks to produce technical drawings
- 4 weeks for tender

Stage 5 - Construction

- 16 weeks in construction

Stage 6 - Handover and Close Out

- 8 weeks for fit out and interpretation

Total predicted timescales: 69 weeks

Project Specific Issues

Pre - application discussions - Historic England, LPA
Consent - Scheduled Monument / Planning / Listed Building
Reports - Ecology / Structural Survey / M&E survey / Drainage Survey / Conservation Management plan / Building Fabric Condition Survey / Archaeology / Maintenance Plan
Other - Site access / Retention of existing uses / access. Perimeter access for surveys - Lighting scheme / Landscaping Scheme, Retention of Perimeter uses / animal enclosures, Potential for wide consultation

Intentionally Left Blank



Intentionally Left Blank



7.0 Visitor & Education Facility

7.0 Visitor & Education Facility

7.2 Movement

7.2.1 Pedestrian Access

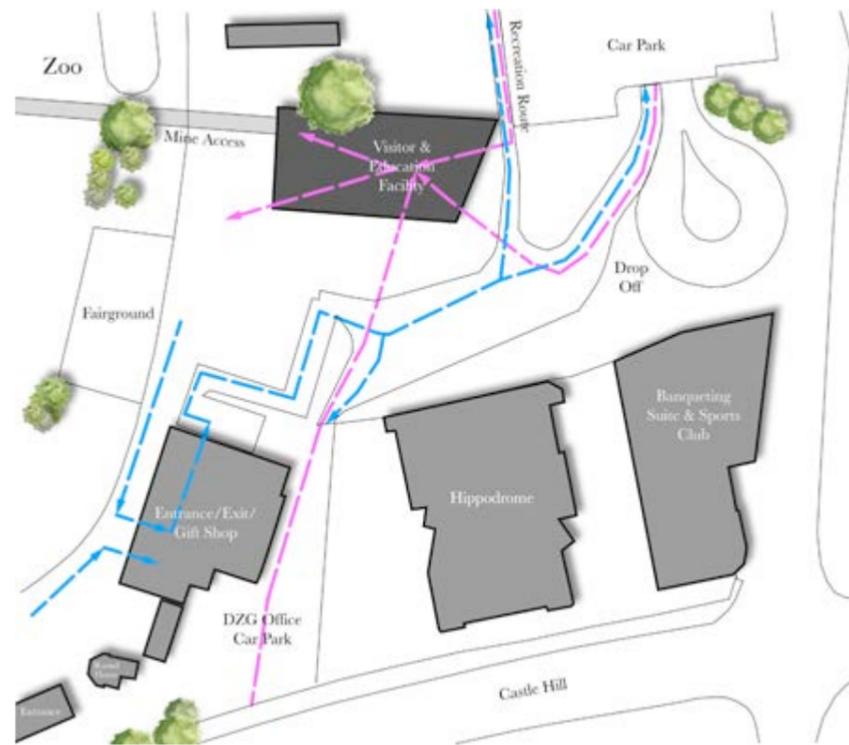
KEY

- Pedestrian Movement - Entrance
- Pedestrian Movement - Exit
- Pedestrian Movement - Future
- ⋯ Metro Line



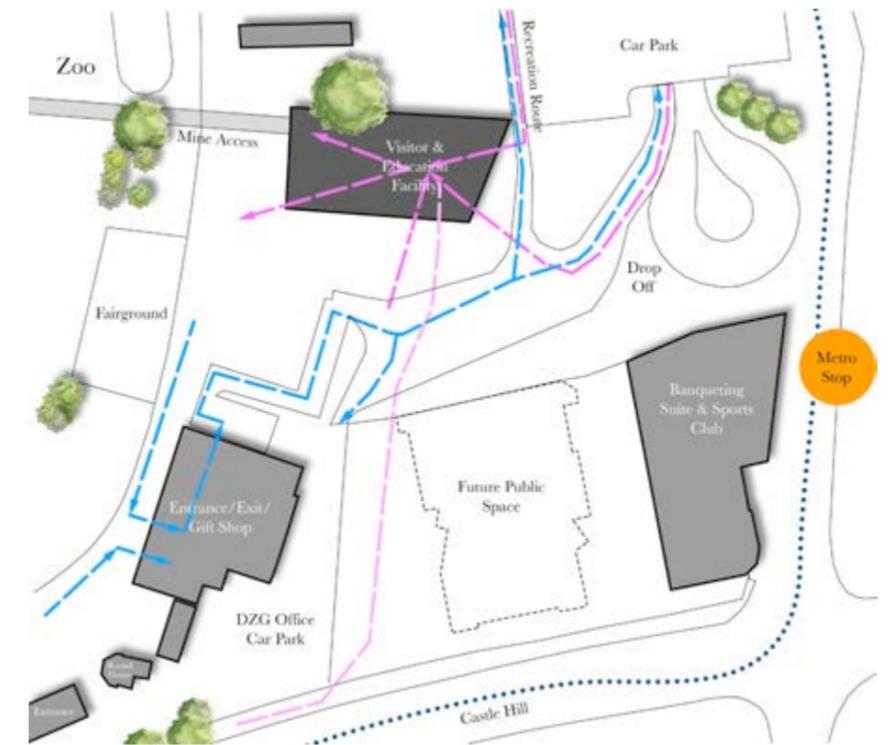
EXISTING

Currently visitors enter the Zoo via the main car park or from the town centre, walking along Castle Hill Road and accessing the Zoo via the DZG office car park. The existing layout encourages all visitors to enter and exit via one building creating a convergence between those who enter and exit the zoo.



PROPOSED

The proposal seeks to separate the stream of visitors, providing a separate entrance and exit strategy, allowing visitors to enter via the Visitor & Education Facility and exit via the gift shop. This proposal seeks to provide a simpler entrance and exit strategy into the zoological gardens.



FUTURE

The future of the Hippodrome building is yet to be determined, however, improved public access could be considered as part of any proposals rather than via the current access through DZG Offices car park, providing a formal entrance to the Zoo and the attractions beyond.

7.0 Visitor & Education Facility

7.3 Context

7.3.1 Proposed Site Location

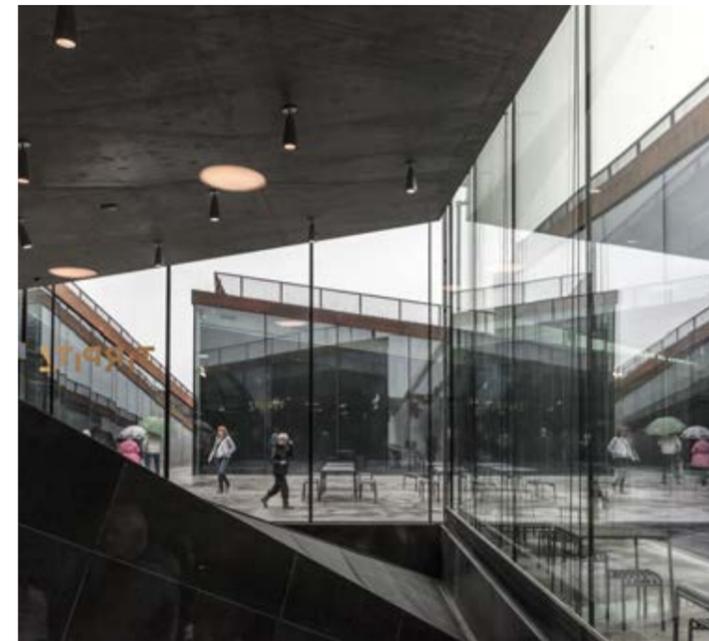


7.0 Visitor & Education Facility

7.4 Precedents

Tirpitz Museum is situated on the West Coast of Denmark. The museum sits as a subtle counterbalance to the original WWI bunker which is embedded into the landscape.

The museum is centred around a courtyard allowing access into the surrounding environment via external corridors cut out of the hillside. It is at once a modern addition and also a part of the landscape and geology.



Tirpitz Museum
BIG Architects
Blåvand, Denmark
2017

Image taken from Dezeen website

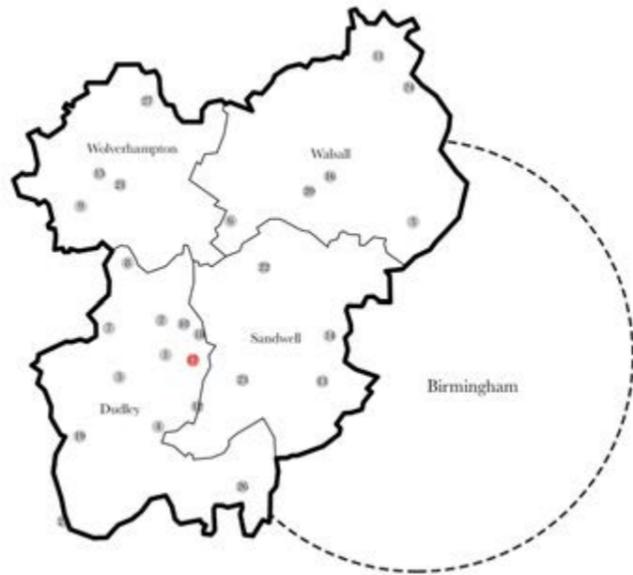
7.0 Visitor & Education Facility

7.5 Proposals

7.5.1 Concepts

Following engagement with the client and the wider stakeholder team, the vision for the building was to extend beyond its educational function and to include other accommodation.

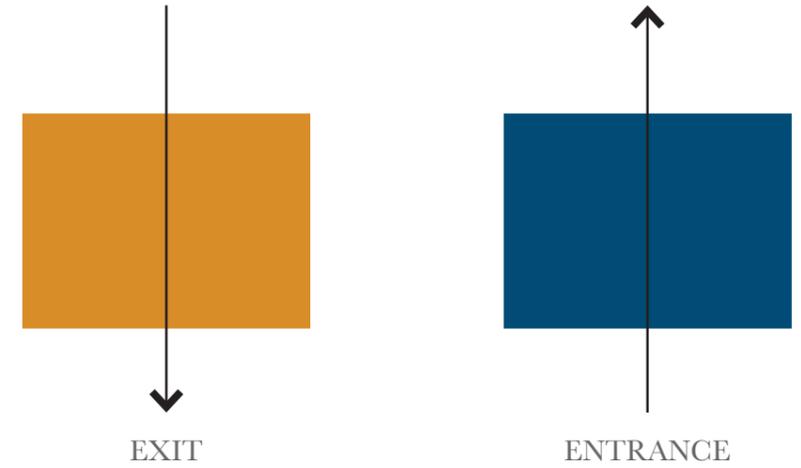
The concepts below have been identified to strengthen and extend the facilities use. Each concept has been influenced by our observations.



GEPARK NODE



STORES CAVERN MINE ENTRANCE



ZOO ENTRANCE



CAFE



BICYCLE HIRE

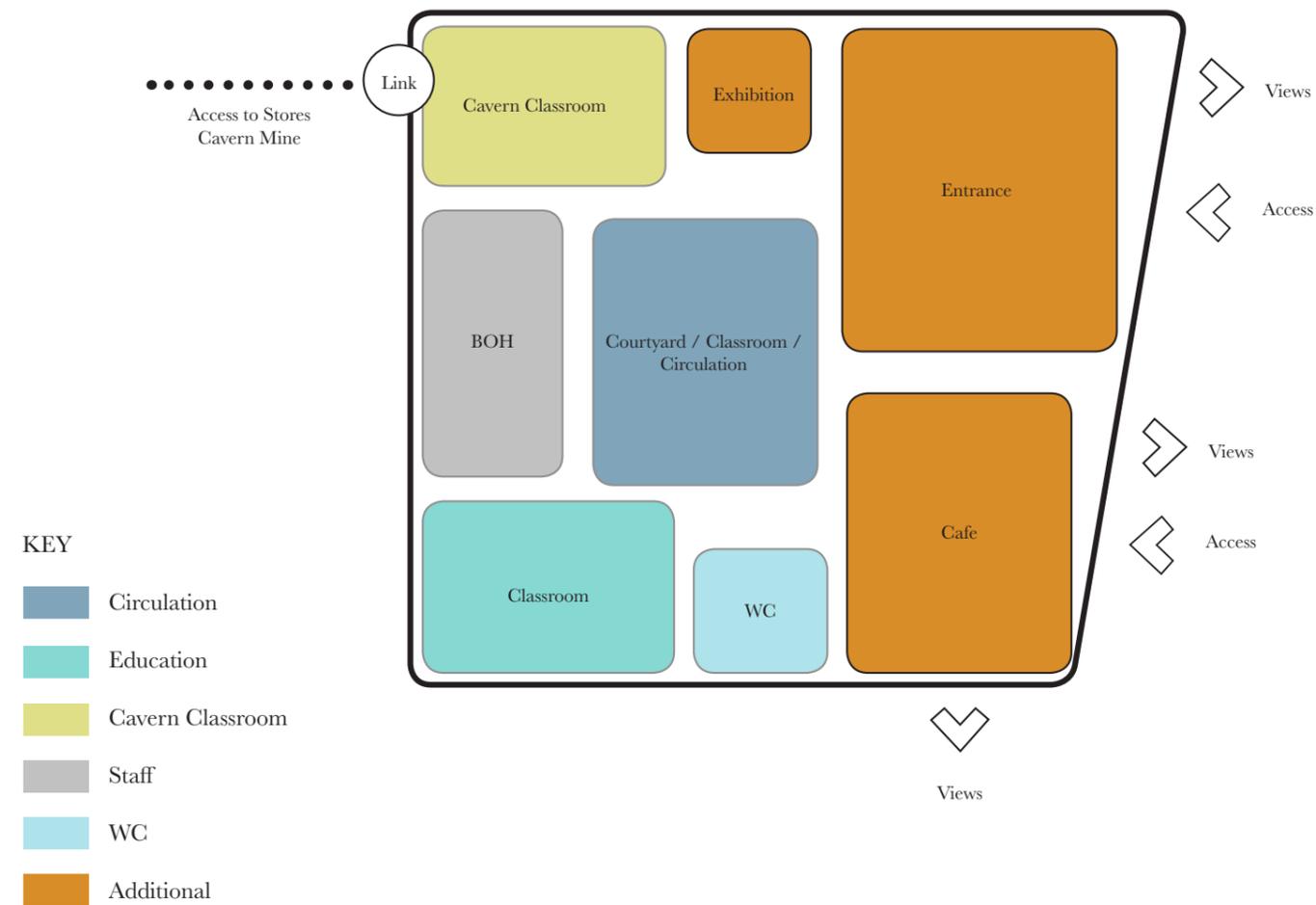


TEACHING / EDUCATION

7.0 Visitor & Education Facility

7.5 Proposals

7.5.2 Floor Plans



GROUND FLOOR PLAN

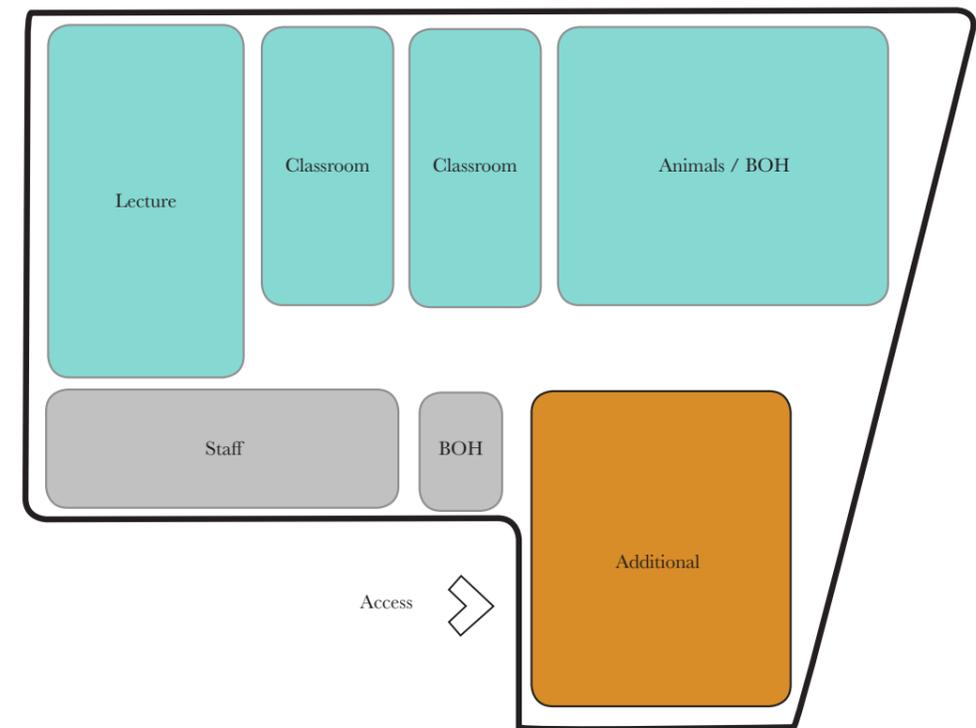
The accommodation identified in the brief is centred around a large courtyard that can also be used as a classroom space. The cavern classroom and exhibition are located at the entrance to the Stores Mine Cavern on the north side of the building. The classroom, cafe and entrance are located along the active facades on the east and south facades. Highlighted in orange is the proposed additional space, this includes; the geotrail node, visitor information, the main zoo entrance, cycle hire and gallery.

Original Accommodation

- Lecture Room
- Classroom x 3
- Cavern Classroom
- Toilets
- Warm and Cool Animal Rooms
- Resources / Props Room
- Office
- Tutorial Room
- Prep Room
- Staff Room
- Stores
- IT / Server Room
- Reception

Additional

- Cafe & Washrooms
- Geotrail Node
- Cycle Hire
- Interpretation
- Archaeology
- Visitor Information
- Gallery
- Rooms for Hire
- Meeting Rooms



FIRST FLOOR PLAN

Training and Zoo entrance is located on the upper floor, allowing access from the main car park. Visitors wind their way around the central courtyard and enter into the training facility on the upper floor or continue into the Zoo. Classrooms and lecture spaces are located on the northern elevation to allow staff facilities and offices to sit along the active frontage.

7.0 Visitor & Education Facility

7.5 Proposals

7.5.3 Perspective



This building is perhaps the most strategically important building within the project list and could allow a significant amount of engagement within the Castle Hill environment. Acting as a hub for the Zoo it could house the entrance and reception to the Zoo and Castle, provide visitor information, interpretation and archaeological information. It could be the reception for activities, training / education, meetings, conferences.

It sits on an important node point on the Geosite Trail and could provide information and activities relating to this with direct access to Stores Cavern Mine which could itself become an important activity on the Geotrail.

7.0 Visitor & Education Facility

7.5 Proposals

7.5.4 Costs

BPN have prepared two proposals for the Visitor & Education Facility: Option 1 is as per the Castle Hill Vision Brief. Please refer to Appendix J for the schedule of accommodation.

Option 2 is the expanded brief that came from extensive discussions with the client and stakeholders, this accommodation provides; a new strategy addressing the entrance and exits to DZG, access to Stores Cavern Mine and access to the attractions within the Castle Hill area including a cafe and interpretation.

Each cost is divided by existing site works and new construction. The budget costs are based on drawn schemes. Below is the overall cost for each option, please refer to appendix C for detailed cost plans to RIBA Stage 1.

Client's original brief

- Classrooms/lecture rooms/tutorial room (including a 'cavern' classroom')
- Resources/props room
- Warm and cool animal rooms
- Offices, Changing Places changing facility, toilets, storage

The overall project cost for Option 1:

£2,861,229.07 (Excluding VAT)

Expanded brief

- Geotrail node
- Interpretation
- Archaeology
- Gallery
- Visitor information
- Meeting rooms
- Café

The overall project cost for Option 2:

£3,843,552.00 (Excluding VAT)

7.0 Visitor & Education Facility

7.5 Proposals

7.5.5 Funding

Outline of possible funding sources available and relevant to the projects, taken from funding commentary provided by L&R Consulting.

Two options have been costed: option one (client's original brief) c. £2.86m and option two (expanded brief) c. £3.84m.

At either the original brief or the expanded brief levels, this is a substantial project which by its nature as a multi-use building is challenging in funding terms. Its best prospects are considered to be as part of a multi-project bid to WMCA/BCLEP supported by DZG's own capital programme, DZG led fundraising together with an element of Trust and Foundation funding for the learning elements. Progress on other elements of the wider Geotrail/Park project may be the trigger for a focused fundraising effort for those components of building use. Funding appeal might be enhanced for the learning components (also embracing volunteering and training) by placing them into an even wider context that not only includes the Castle Hill vision projects but also Dudley archives/museum gallery and the Black Country Living Museum.

BCLEP

'The Black Country Local Enterprise Partnership (BCLEP) aims to create the conditions for enterprise to flourish resulting in greater economic prosperity across the Black Country area. It will do this through facilitation and co-ordination of actions by private, public and voluntary sector organisations with a focus on stimulating the drivers of economic development, education & skills development and infrastructure & environmental enhancements. Outcomes from these collective actions are focussed on increasing the levels of employment, improving the levels of businesses operating within the area, modernisation and diversifying the business base and up skilling across the workforce.' Text taken from the BCLEP website.

See Appendix F, G and H for full funding report.

	£000's	HLF	WMCA/ BCLEP	HE	ERDF	T&F	Pyte
Tectons Phase 2	2,015	/		/		/	
Giraffe House	1,030		/			/	
Stores Cavern	756	/	/			/	
Visitor and Education Facility	3,844		/			/	
Round House/Lodge	78	/	/			/	
Dudley Castle	3,558	/	/	/		/	
Woodland Management	1,425	/	/		/	/	
Woodland Platform	187	/	/		/	/	
High Ropes and Forest Coaster	500						/
Total Cost	13,393						

Note: Table excludes VAT, professional fees, construction inflation, capital allowances, land remediation, risks, relief, grants, etc. For breakdown of costs please refer to the appendices.

7.0 Visitor & Education Facility

7.5 Proposals

7.5.6 Project Specific Issues / Proposed Programme

The Discovery Centres current use as a education facility will be relocated into the Visitor & Education Facility and therefore these two projects will be linked. The educational facilities within the Visitor & Education Facility will need to be up and running before the works on the Discovery Centre can be started to allow the Zoo to have some form of training space.

Below we have provided timescales for each RIBA work stage for the proposed Visitor & Education Facility

RIBA Work Stages

Stage 0 - Strategic Definition

- Completed during development of funding document

Stage 1 - Preparation and Brief

- Completed during development of funding document

Stage 2 - Concept Design

- 12 weeks to develop proposals

Stage 3 - Developed Design

- 8 weeks develop designs, produce planning drawings
- 16 weeks for full planning application
- (12-16 weeks for statutory consent)

Stage 4 - Technical Design

- 12 weeks to produce technical drawings
- 6 weeks for tender

Stage 5 - Construction

- 52 - 60 weeks in construction

Stage 6 - Handover and Close Out

- 8 weeks for fit out and interpretation

Total predicted timescales: **122 weeks**

Project Specific Issues

- **Pre-application discussions** - Historic England, Natural England, the Twentieth Century Society and the LPA to be held.
- **Consent** - Scheduled Monument Consent & Planning.
- **Reports** - Ground investigation / Ecology / Archaeology
- **Other** - Removal / Replacement of Transformer

Intentionally Left Blank



8.0 The Stores Cavern Mine

8.0 Stores Cavern Mine

8.1 Existing

8.1.1 Introduction

The objective is to reinstate the tunnel to facilitate access into Stores Cavern Mine allowing this asset to form part of the wider Black Country Geopark trail.

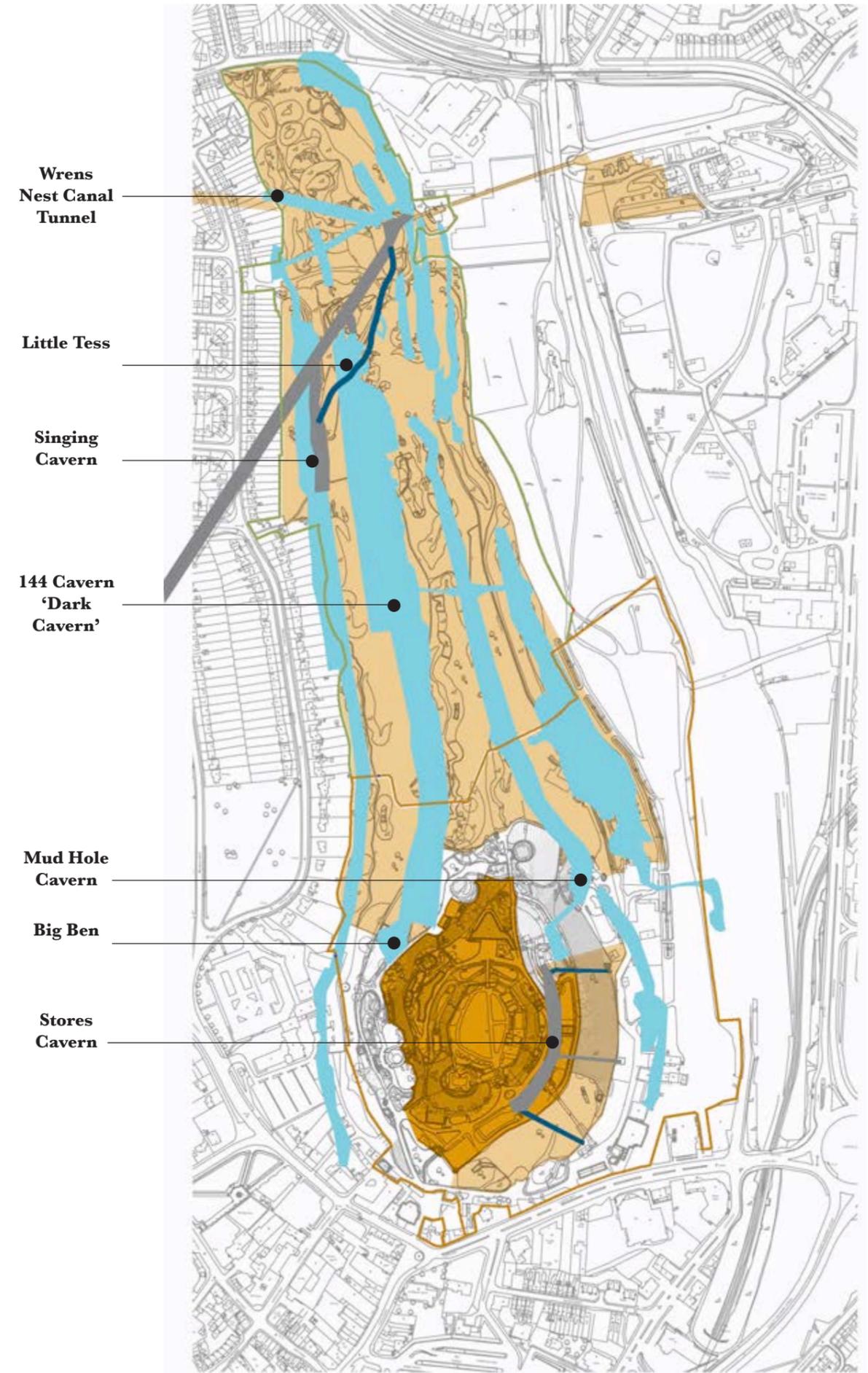
Currently there are three access tunnels into the cavern, the first is located by the chairlift base station, the second is level with the maintenance yard and the third is at the foot of the Bear Ravine. The second tunnel located at the base of the hillside has been chosen as the proposed access, it extends under the road and comes out at the lower level of the maintenance yard. This tunnel is currently blocked at both ends and requires major restoration to provide an access route directly into the Caverns without having to pass through the Zoo. It is proposed that the central access tunnel would be located within the Visitor & Education Facility creating a base for information and equipment required to enter the Cavern. Due to the range of constraints it is anticipated that access will be restricted to certain times or pre arranged visits.

The reinstatement of the tunnel would provide an additional facet to attract visitors to an already varied site containing a variety of endangered wild animals, a Norman Castle and a cluster of modernist architecture. This proposal won't compete with the wet Caverns at the Dudley Canal & Tunnel Trust rather it will add a further significant piece to the story of Dudley's hidden history. The Stores Cavern Mine will be recognised as a dry cavern along the Geotrail and should also be considered in the context of Dudley Council's application to secure Geopark status for the Black Country.

It is recognised that this project presents considerable challenges which include; reconciliation of the bat hibernacula, maintaining and improving the environment for the bats which may equate to large sums, this will inform the viability of the project. Further research of the bat population in the Stores Cavern Mine will determine how the tunnel can be utilised as a visitor and educational facility. Due to previous infill at the site, it has been noted that most of the bat activity has been sighted at Big Ben Cavern.

KEY

- DZG Boundary
- DMBC Boundary
- Tunnels and caverns with current safe access
- 18th & 19th century tunnels and caverns
- 20th century tunnels
- Boundary of Scheduled Ancient Monument for the Castle
- Boundary of Scheduled Ancient Monument for the limestone workings



8.0 Stores Cavern Mine

8.1 Existing

8.1.2 History

Deposits of limestone run through the hills in and around Dudley, formed in the Silurian period around 430 and 425 million years before our present time, they provide some of the most diverse and best preserved fossils in the world and are of international palaeontological significance. At the end of the Carboniferous period severe folding of the underlying rocks caused the limestone to rise and create a ridge running from north north west to south south east.

In 1600s it was discovered that the combination of Carboniferous coal, ironstone bearing strata and Silurian limestones provided the raw materials for the development of the coke-fired blast furnace which enabled the development of the iron-smelting industry. By perfecting this process this led to a revolution in the manufacture of smelting of cast iron which transformed the black country into the heartland of England's iron industry.

Work began in 1800 starting with the access now within the Zoo car park, this tunnel was brick lined and formed as a 'cut and cover' tunnel, this was to ensure the paths around the base of the Castle would not see the comings and goings of the workers to and from the mine. From this access point the mineral was mined at right angles forming one huge cavity. The cavern is around 600 feet in length, 40 feet high in places and around 50-55 feet in width. In the 1920s, the Stores Cavern Mine or 'Devils Mouth' as it became known by local people became a favourite place in the 1920s for intrepid explorers who enjoyed the area during school holidays.

When the Zoo opened in 1937 it was planned at that time to open up a cavern for tourist purposes and fit an enormous aquarium along one side, however WWII broke out and in 1940, the Earl of Dudley's Mine Agent suggested storing all the Estate's plans in the cavern. In 1941, the cavern was requisitioned by the Air Ministry and was used as a stand by location if the engine production line in Coventry and Birmingham was bombed and subsequently stopped production, this did not happen and the Cavern was given to the BSA for munitions manufacture and storage. It was completely fitted out with level concrete floors, running water, air conditioning, toilets, office blocks and an internal lift for

Visits / Inspections

1850s | First visit to the mine
1993 | Post stabilisation monitoring inspections by Arup
1995 | Dudley MBC
2017 | Council Officers / Historic England
2018 | BPN / ARUP / DZG

moving explosives from the central access tunnel. Two additional adits (tunnels) were driven in 1941, one at each end of the mine for access and air flow.

At the end of the war the Cavern was vacated and has since remained abandoned. In 1968 the Cavern was briefly used as a Father Christmas Grotto. Further surveys in 1990 showed a marked difference as all extractors, air conditioning had been removed and the offices had deteriorated.

In 1992 it was recommended that stabilization works would be required to prevent deterioration and possible collapse. A detailed photographic record of the roof of the mine was compiled in November 1992 to provide a baseline for these works. But after a feasibility study carried out by the council's engineering department, it was found that the money could be spent on rock-bolting the roof and stabilising parts of the Cavern instead of filling it completely, and the remaining structure could be preserved as a tourist attraction. The stabilization works were undertaken between February and July 1993. In 1993 the Department of the Environment, on the recommendation of its limestone advisory panel, made available funds for infilling Stores Cavern Mine. A large part of the upper section of the limestone gallery was infilled whilst still maintaining a tunnel to connect with the northern tunnel (access no.3)

The Cavern was opened to the public on the 8th May 1995 to commemorate VE Day, allowing small groups access to the office block, allowing views from the balcony along the length of the Cavern.

Stores Cavern Mine along with the other examples of limeworking remains across Castle Hill were designated as a Scheduled Monument in 2004 and is demarcated on the Historic England Website.

Arup have recently completed a detailed LiDAR survey, of the project which can be utilised for detailed design purposes.

Reports

09.1987 | Castle Hill South, Geotechnical Report
09.1992 | Dudley Zoo, Addendum report on monitoring
02.1996 | Inspection Report Limestone Cavern
07.2018 | Inspection Report by Arup

Publications

1852 | Rambles about Dudley Castle | William Harris
1984 | Abandoned Limestone Workings - A Strategy for Action | D.Brook

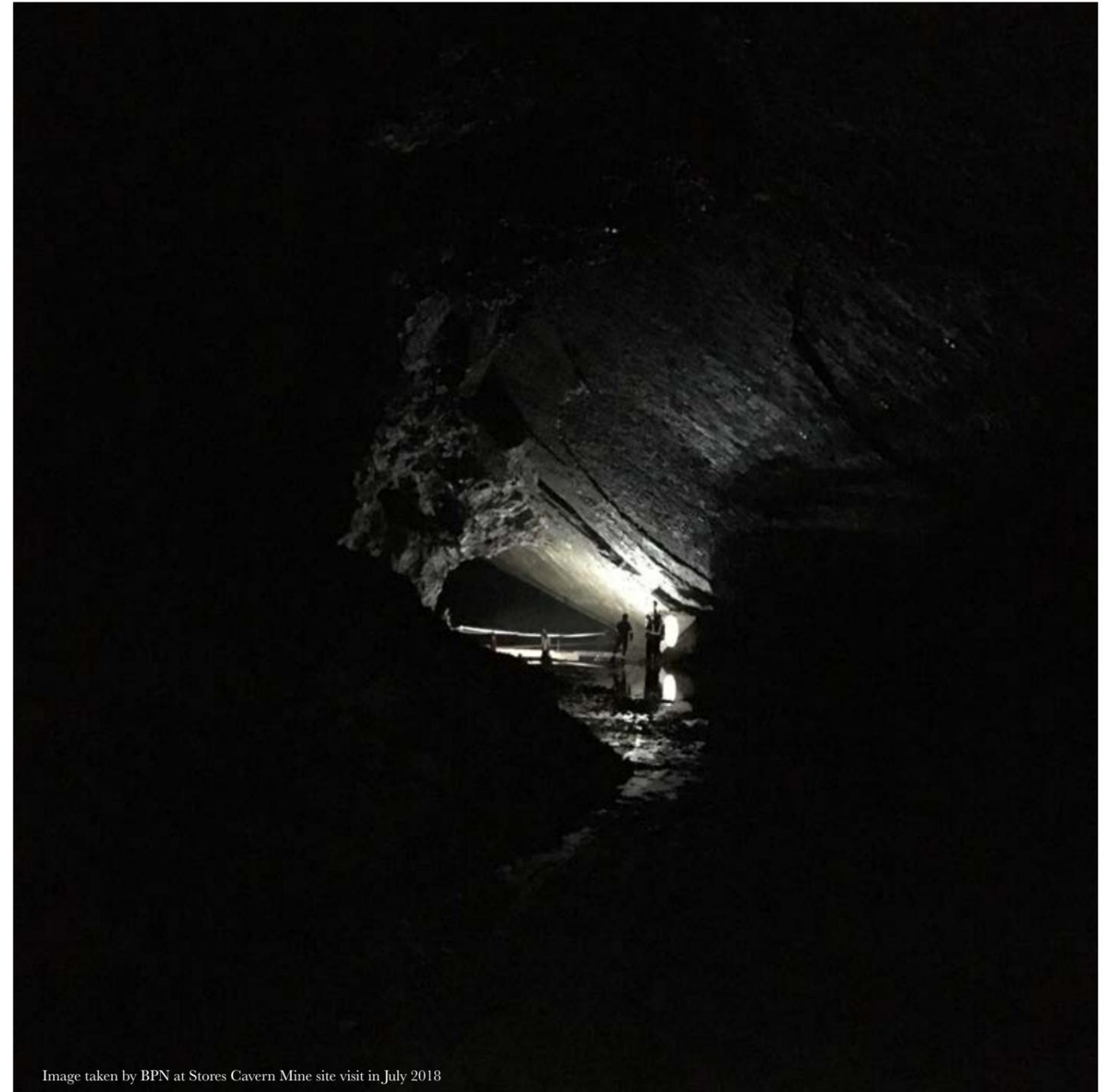


Image taken by BPN at Stores Cavern Mine site visit in July 2018

8.0 Stores Cavern Mine

8.1 Existing

8.1.3 Access

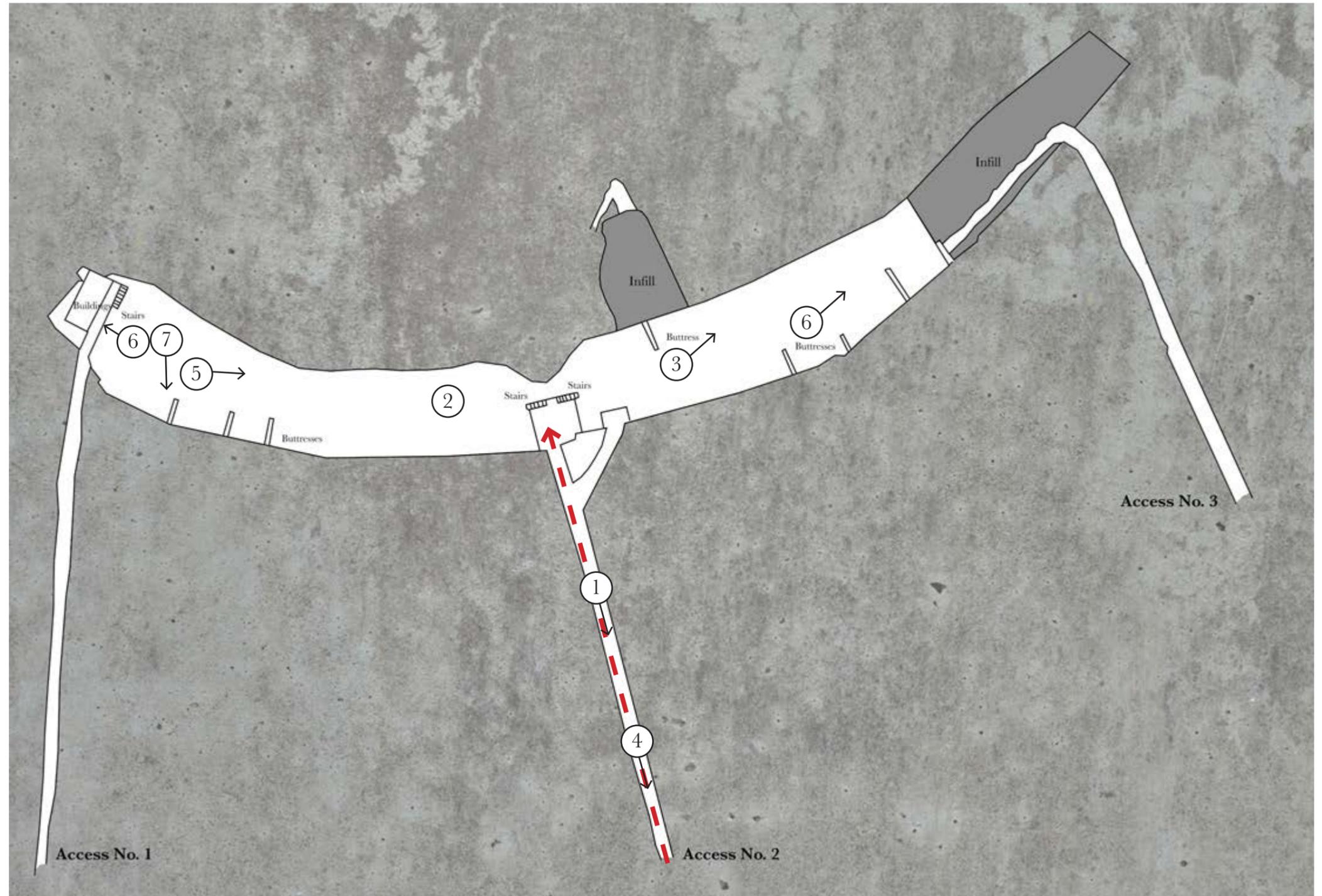
The adjacent drawing indicates the current layout of the Stores Cavern Mine and its access points. As mentioned access no. 2 will be used to connect the Visitor & Education Facility to the Stores Cavern Mine.

To understand whether this is a viable link, bat studies have been carried out by DZG at certain entrance points and are still ongoing, exploring the use of the Cavern by bats and contrasting with similar bat use in local Caverns.

DZG plan to undertake trips into the Cavern in January & February 2019 to undertake a hibernation survey of the mine and to determine the use of the central tunnel by bats. Discussions are ongoing with Maurice Webber, Conservation Constructions Ltd to undertake the work in conjunction with the Zoo.



Image of the access within the Cavern



Illustrative plan of the Stores Mine Cavern, image numbers and angle of views demonstrated on the plan

8.0 Stores Cavern Mine

8.1 Existing

8.1.4 Conditions

Image 1.

Entrance to the central access tunnel from within the Stores Cavern Mine. The tunnel has been lined with shotcrete to ensure no rock fall occurs, the tunnel contains some hibernation spots for bats, which were mostly empty during the site visit in July 2018.



Image 2.

Calcium pearls were found on the floor of the Cavern, these have been formed below the ventilation hole formed when the Cavern was formed as a bat hibernacula.



Image 3.

This image displays the length of the Cavern from the central steps facing east, the image shows the infill areas within the Cavern.



Image 4.

The current state of the central access tunnel. Water reaches around a foot in depth and the tunnel is blocked up.



Image 5.

Piles of Basalt rock added to the Cavern to aid the bat hibernacula allowing bats to roost in amongst the rubble.



Image 6.

The original brick built stores dating from WW2, access is at the upper level.

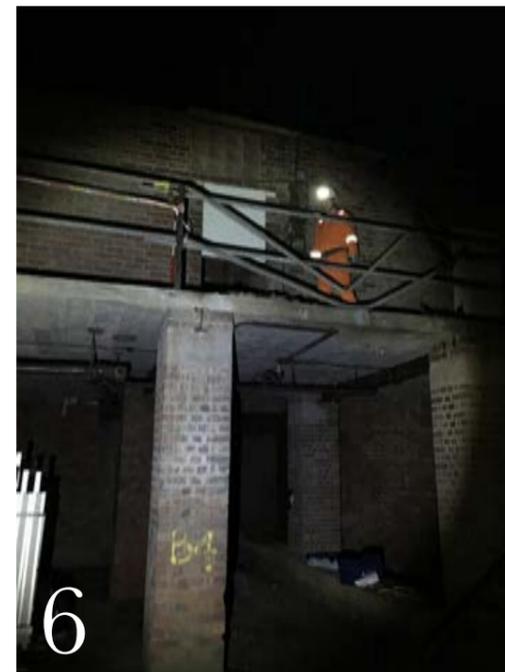


Image 7.

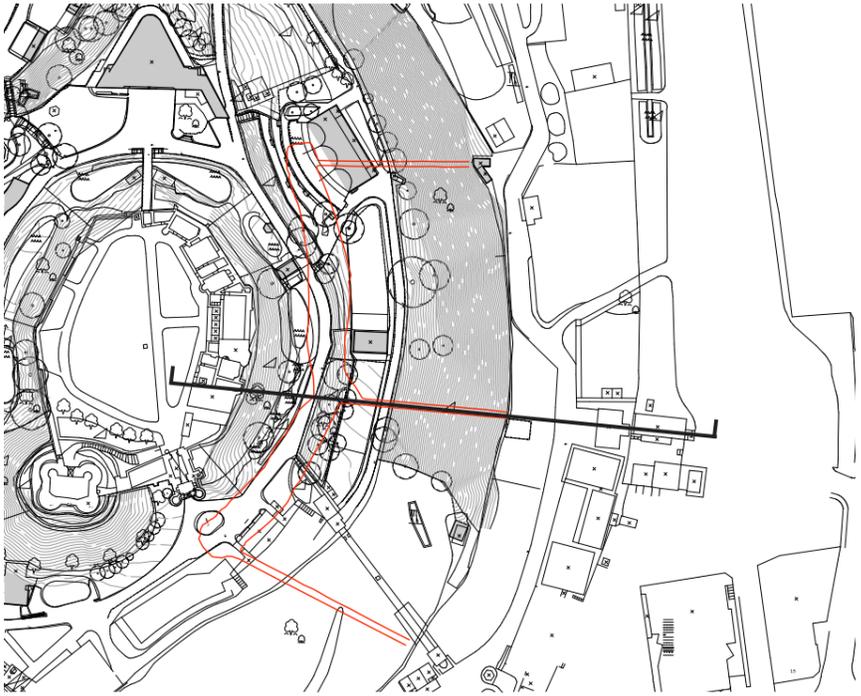
Brick buttresses were built during WW2 to stabilise the Cavern. Rock bolting is clearly shown on the Cavern ceiling.



8.0 Stores Cavern Mine

8.2 Proposal

8.2.1 Site Section



Location plan indicating site section



Proposed Visitor & Education Facility

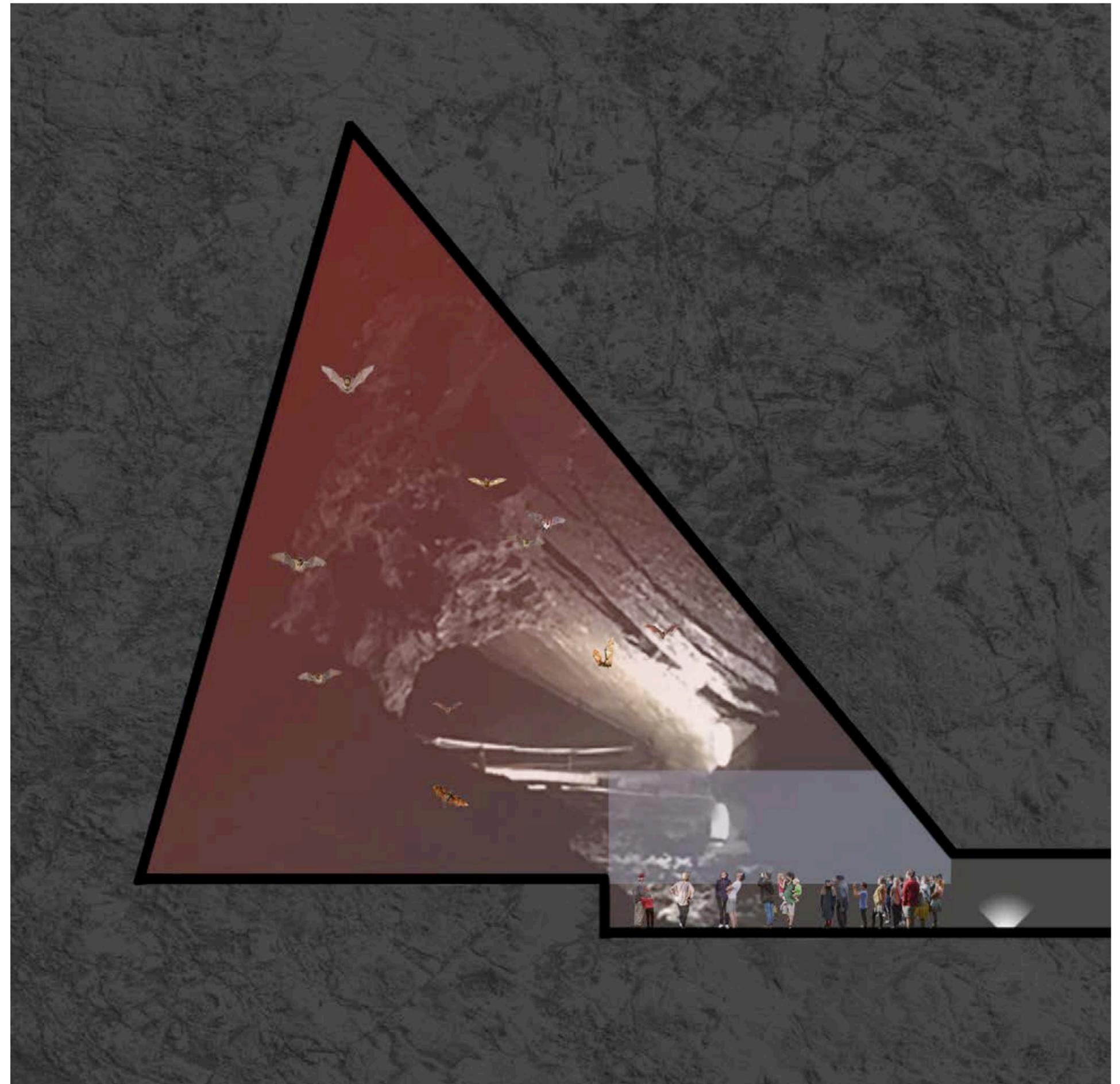
8.0 Stores Cavern Mine

8.2 Proposal

8.2.2 Mine

BPN met with DMBC to discuss the use of Stores Cavern Mine as an attraction. DMBC informed the team that a Management and Maintenance Plan would need to be prepared that will encapsulate all of the following actions which will need to occur in the following order to understand the viability of the project and roles and responsibilities:

- Survey to be undertaken to inspect the bats and the hibernaculum. This will set the context for the use of the Cavern / tunnel and the parameters for the future design.
- No issues with closing the tunnel off providing acoustics, humidity, temperature are not affected.
- The entrance tunnel below the road will need structural input as no information is available on the condition.
- The structural integrity of the shotcrete and rockbolts will require continual regular testing.
- An ecological impact report will be required prior to construction.
- Mines rescue will need to be consulted regarding escape strategy.
- Further pre-application discussions need to take place with statutory consultee's such as Historic England and Natural England.



Section of the proposed Stores Cavern Mine viewing platform

8.0 Stores Cavern Mine

8.2 Proposal

8.2.3 Costs

The proposed costs for the Stores Cavern Mine allows for the breakthrough between the bottom of the hill, under the road and into the stores area, the preparation to the tunnel and the viewing area within the Cavern. Please refer to the appendix C for the cost breakdown.

The overall project cost:

£756,174.38 (Excluding VAT)

8.0 Stores Cavern Mine

8.2 Proposal

8.2.4 Funding

The Stores Cavern Mine project is costed at c. £756k. Although the project has wildlife interest (bats) and could be used for the display other nocturnal creatures, the costs predominantly relate to access infrastructure and viewing glass box.

This does not look like a strong contender for HLF investment, given the range of other projects within the overall vision that could have greater appeal to this funder. Its best prospects are considered to be as part of a multi-project bid to WMCA/BCLEP supported by DZG's own capital programme (the latter on the basis that it will provide help to further differentiate the visitor offer and provide a complementary experience).

	£000's	HLF	WMCA/BCLEP	HE	ERDF	T&F	Pyte
Tectons Phase 2	2,015	/		/		/	
Giraffe House	1,030		/			/	
Stores Cavern	756	/	/			/	
Visitor and Education Facility	3,844		/			/	
Round House/Lodge	78	/	/			/	
Dudley Castle	3,558	/	/	/		/	
Woodland Management	1,425	/	/		/	/	
Woodland Platform	187	/	/		/	/	
High Ropes and Forest Coaster	500						/
Total Cost	13,393						

Note: Table excludes VAT, professional fees, construction inflation, capital allowances, land remediation, risks, relief, grants, etc. For breakdown of costs please refer to the appendices.

8.0 Stores Cavern Mine

8.2 Proposal

8.2.5 Project Specific Issues / Proposed Programme

Ideally these works are to be completed at the same time as the Visitor & Education Facility.

Below we have provided timescales for each RIBA work stage for the proposed Stores mine cavern proposals.

RIBA Work Stages

Stage 0 - Strategic Definition

- Completed during development of funding document

Stage 1 - Preparation and Brief

- Completed during development of funding document

Stage 2 - Concept Design

- 6 weeks to develop proposals

Stage 3 - Developed Design

- 16 - 20 weeks for the production of drawings
- 13 weeks for statutory consent

Stage 4 - Technical Design

- 20 - 24 weeks to produce technical drawings
- 8 weeks for tender

Stage 5 - Construction

- 24 - 39 weeks in construction
- Construction to be phased depending on bat activity

Stage 6 - Handover and Close Out

- 8 weeks for fit out and interpretation

Total predicted timescales: **118 weeks**

Project Specific Issues

- Pre-application discussions** - Historic England, Natural England and the LPA to be held.
- Consent** - Scheduled Monument & Planning Consent.
- Reports** - Ground investigation / Ecology Impact Report / Bat Surveys / Structural Survey / Escape Strategy / Ventilation - Air Quality / Archaeology
- Other** - Opening up of previous tunnels.

Intentionally Left Blank



Intentionally Left Blank



9.0 The Lodge

9.0 The Lodge

9.1 Existing

9.1.1 History

Located to the east of the original Zoo entrance the lodge was built in the 1800s as part of the Castle Hill grounds development. The historic paths guided visitors around the base of the Castle, each lodge guarding the entrance points to the grounds. There is evidence of another lodge to the north of Castle Hill that has since been demolished. The lodge is Grade 2 listed and was given this status in 1976.

The Georgian lodges and boundary walls illustrate the management of the Castle as a private pleasure grounds in the late 18th and early 19th century (following diversion of Castle Hill Road)

Georgian and Victorian footpaths, garden walls, carriage drives and woodlands illustrate further development of Castle Hill as a romantic landscape during the 19th centuries.

The small stone lodge between the entrance canopies and former café was probably built in the early 19th century at the same time as the improvements to the road up Castle Hill and the construction of the boundary wall to the south, both features providing greater control over access to the Castle Hill.

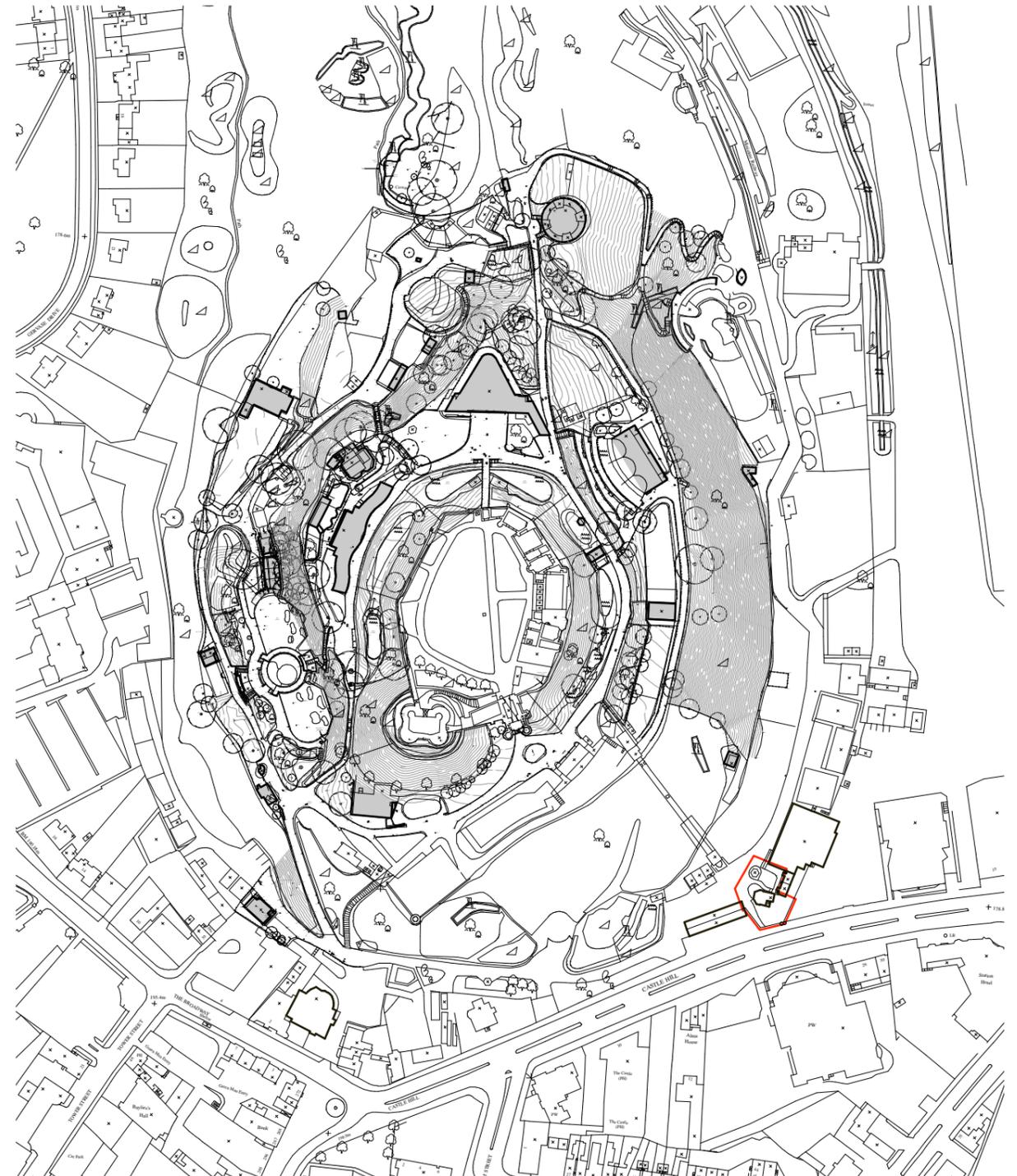
The Gatehouse Lodge at the foot of Castle Hill is a more vernacular building, using stone to create a robust structure, whilst the lodge is a diminutive structure, suggesting the servile status of its historic occupant, whilst the shape set it apart from normal cottages. The stone of its walls is the same as of the long boundary wall of the Castle and Zoo, which is probably contemporary with it. Many of the low retaining walls alongside the footpaths that run through the Zoo grounds appear to have been constructed during the 19th century as part of the use of the hill as pleasure grounds. They are recognisable by the use of stone for the walling.



Image of the Gatehouse Lodge, 1904, provided by DMBC



Image of the since demolished Castle Mill Lodge.



Location of the Lodge

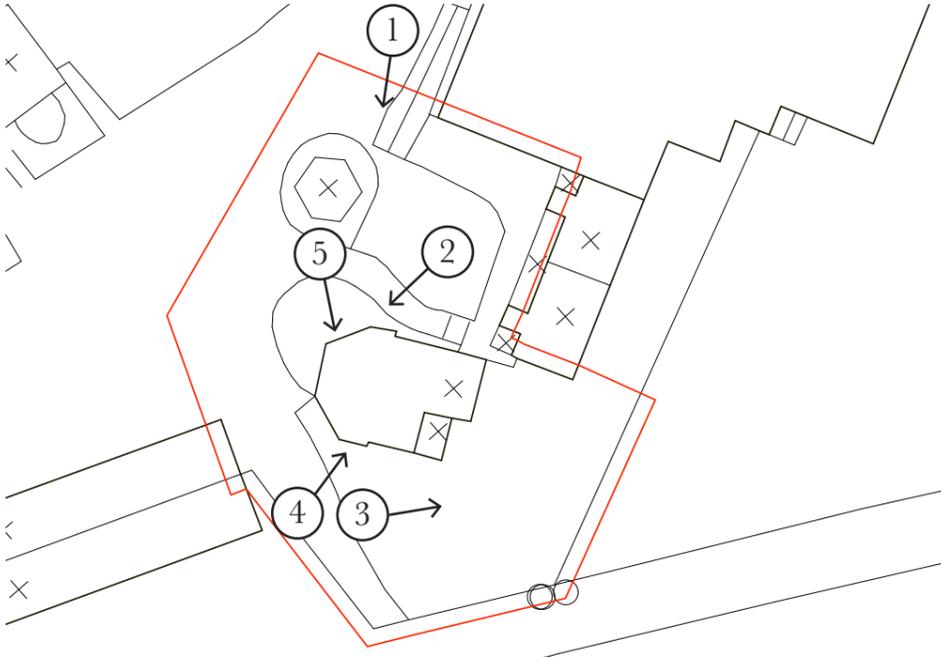
9.0 The Lodge

9.1 Existing

9.1.2 Location and Condition

The aim of the project is to repair the structure and upgrade the facilities within, the primary role being to conserve and educate. The DZG requires a specific facility to enable it to engage with general visitors so they can experience conservation action at first hand.

The Lodge is currently in a state of disrepair and is unused. Constructed of uncoursed limestone, slate roof tiles and wooden arched windows and a small garden to the rear. The rustic nature of the external facade and location of this building is ideal as a interactive conservation experience.



Site plan of the current lodge



9.0 The Lodge

9.1 Existing

9.1.3 Internal

The lodge was previously used as an office. It consists of a basement and two upper levels accessed by a winding staircase which leads up to the second floor which is separated by a small lobby at the top of the stairs. Each floor consists of two rooms with a central fireplace from the ground floor up to the first floor. The ground floor has some existing sanitaryware and remnants of the old kitchen.

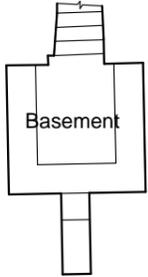


9.0 The Lodge

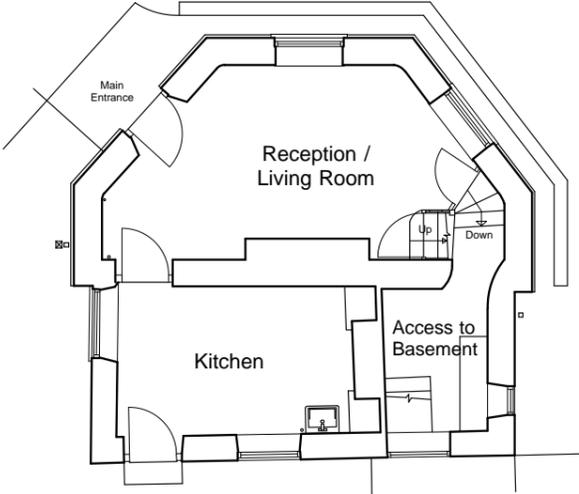
9.1 Existing

9.1.4 Plans & Elevations

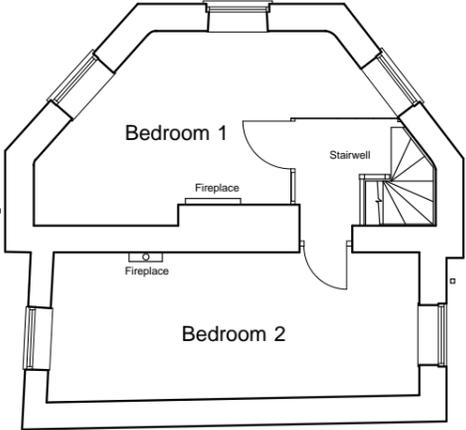
A survey of the current layout and elevations has been undertaken. The elevations demonstrate a central band of stone around the entire face of the building delineating the two floors, with tripartite windows to the ground floor and dual panelled windows to the first floor. The rear of the property facing into the original garden has little detail and six glazed panel window, differing from those on the front elevations.



Basement Plan



Ground Floor Plan



First Floor Plan



North Elevation

South Elevation

West Elevation

East Elevation

9.0 The Lodge

9.2 Proposal

9.2.1 Layout & Perspective

The lodge will be a future showcase of conservation projects on a local, national and worldwide scale. The landscaping adjacent to the building will be a platform to host talks, discussions and display interpretation boards to explain the work that Dudley Zoological Gardens have undertaken. The lodge will be allocated as a volunteer hub and refurbished with various welfare facilities providing a base for the volunteers to use.



Proposed Site Plan, displaying the proposed landscape and volunteer base



9.0 The Lodge

9.2 Proposal

9.2.2 Costs

The works at the lodge are divided between external landscape works and internal refurbishment. Please see appendix C for detailed costs.

The overall project cost:

£78,373.97 (Excluding VAT)

9.0 The Lodge

9.2 Proposal

9.2.3 Funding

This is costed at c. £78k. It combines a facility for a volunteer base with outdoor interpretation of conservation in action. Given its modest scale (but laudable ambition) this looks like a good project for a collaboration with Dudley College, as an apprentice based venture (for the building work) and as part of a wider volunteering initiative (interpretation) It could appeal to local/regional trusts and foundations.

Local Trusts, Foundations and Friends Organisations

Locally, the Friends of Dudley Castle are a longstanding organisation dedicated to promoting the importance of the Castle. We understand that fundraising is one of their activities.

We have reviewed the Heart of England Community Foundation funding portal as one source of local community based grant sources. However, the ten listed schemes offer grants in the range £1k to £10k and are focused on 'grass roots' community projects.

There will be many other local trusts that could be potential funders, many at the smaller grants level, but specific research outside the scope of this overview would be needed to identify potentially 'hot' prospects.

	£000's	HLF	WMCA/ BCLEP	HE	ERDF	T&F	Prte
Tectors Phase 2	2,015	/		/		/	
Giraffe House	1,030		/			/	
Stores Cavern	756	/	/			/	
Visitor and Education Facility	3,844		/			/	
Round House/Lodge	78	/	/			/	
Dudley Castle	3,558	/	/	/		/	
Woodland Management	1,425	/	/		/	/	
Woodland Platform	187	/	/		/	/	
High Ropes and Forest Coaster	500						/
Total Cost	13,393						

Note: Table excludes VAT, professional fees, construction inflation, capital allowances, land remediation, risks, relief, grants, etc. For breakdown of costs please refer to the appendices.

9.0 The Lodge

9.2 Proposal

9.2.4 Project Specific Issues / Proposed Programme

This can be completed as a independent piece of construction.

Below we have provided timescales for each RIBA work stage for the proposed the Lodge proposals.

RIBA Work Stages

Stage 0 - Strategic Definition

- Completed during development of funding document

Stage 1 - Preparation and Brief

- Completed during development of funding document

Stage 2 - Concept Design

- 4 weeks to develop proposals

Stage 3 - Developed Design

- 8 - 10 weeks for the production of drawings
- 13 weeks for statutory consent

Stage 4 - Technical Design

- 10 - 13 weeks to produce technical drawings
- 4 weeks for tender

Stage 5 - Construction

- 12-15 weeks in construction

Stage 6 - Handover and Close Out

- 8 weeks for fit out and interpretation

Total predicted timescales: **67 weeks**

Project Specific Issues

- Pre-application discussions** - Historic England and the LPA
- Consent** - Listed & Planning Consent.
- Reports** - Bat Surveys / Structural Survey

Intentionally Left Blank



10.0 Giraffe House

10.0 Giraffe House

10.1 Existing

10.1.1 Location & Condition

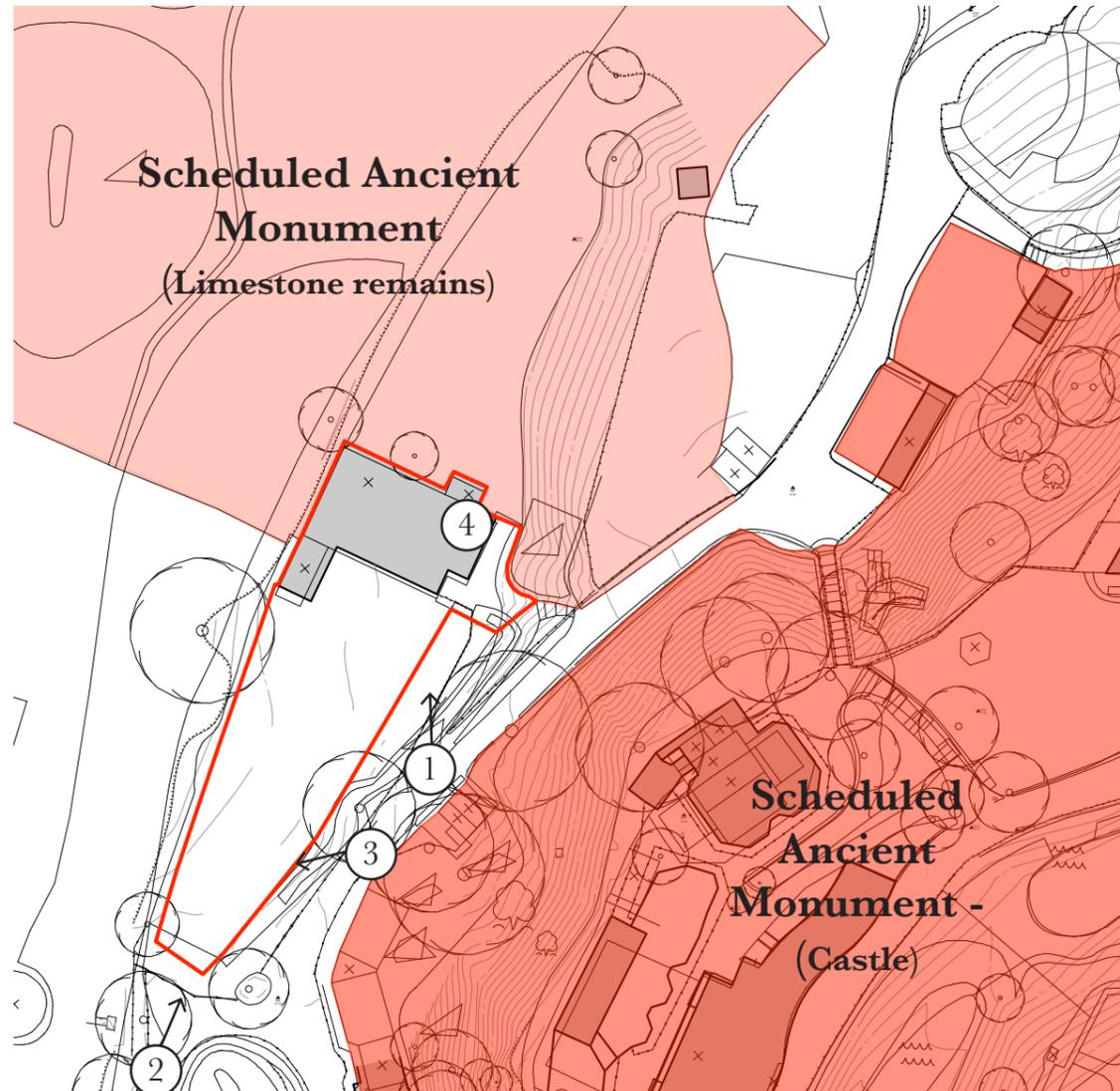
The current giraffe house sits within the western parcel of the site at the base of Castle Hill. The enclosure consists of an outbuilding for the giraffes and a courtyard. To the north of the site is an external storage area.

The brief proposes to design and erect an energy efficient building incorporating a renewable energy system and utilise the geological nature of the site. This will require further assessment to understand

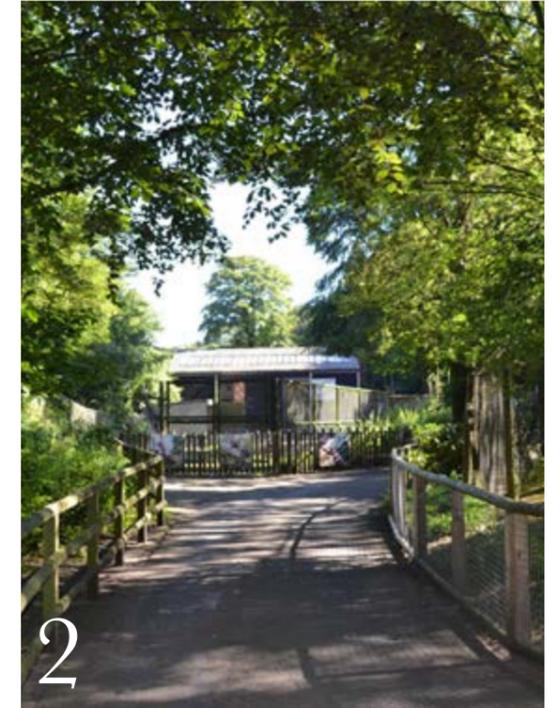
the impact on underlying geology and archaeology.

By relocating this building it allows DZG to vastly increase the size of the paddock.

The original giraffe house was built over 50 years ago and was constructed around a concrete frame, timber infill and a corrugated fibre roof this makes the building incredibly energy inefficient in both design and function.



Existing location plan, the existing enclosure has been highlighted by a red boundary



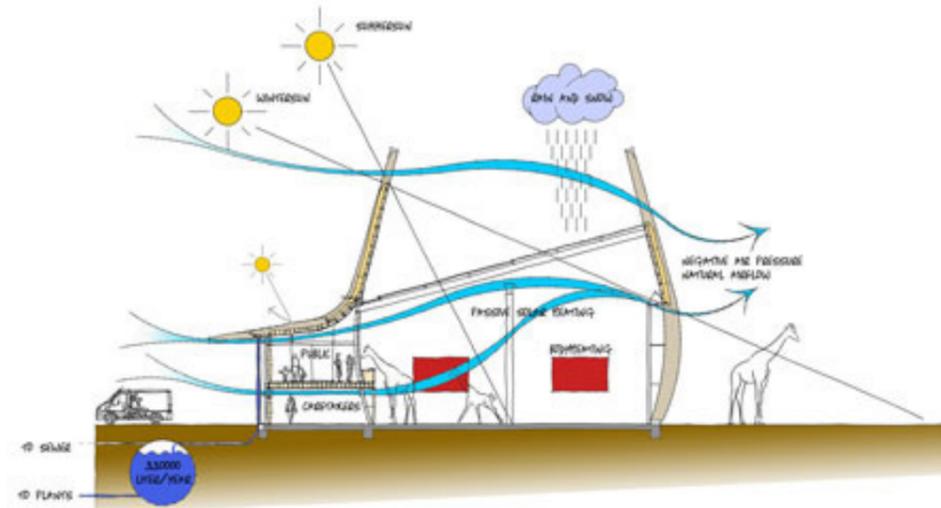
10.0 Giraffe House

10.2 Proposal

10.2.1 Precedents

This unique home in the Netherlands is created within a man made hill in a Dutch nature reserve. The hill allows heat to be retained within the home by being partially submerged within the ground. The glazing faces south to allow the southern sun to heat up the concrete floor, acting as a thermal mass which retains heat, slowly releasing this throughout the day. The windows and openings are interspersed throughout the house to create interest and light to the darkest parts of the house.

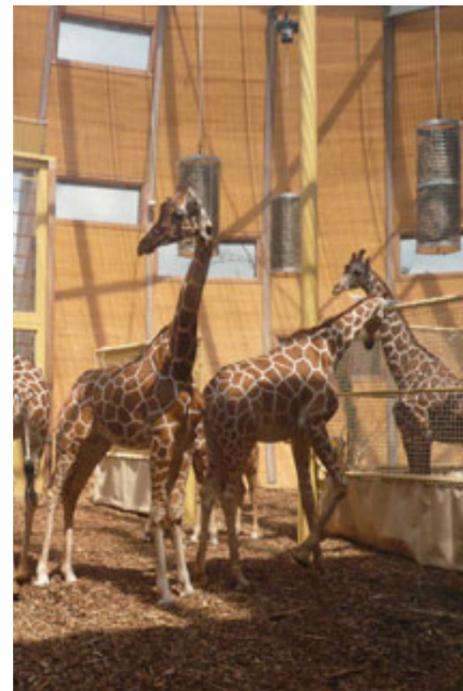
A sustainable giraffe enclosure was built in Rotterdam Zoo in 2009. The Architects claimed that this building was the first sustainable animal enclosure built in the Netherlands. The building takes advantage of passive solar heating, natural ventilation and lighting. The building doesn't require heating due to the walls being consistently heated by steel elements within their depth heated by the burning of wood chips. This building adopts the cradle to cradle philosophy, always in a state of constant recycling.



Dutch Mountain House
Denieuwegeneratie
Netherlands
2012



Savannehuis
LAM Architects
Rotterdam Zoo
2009



10.0 Giraffe House

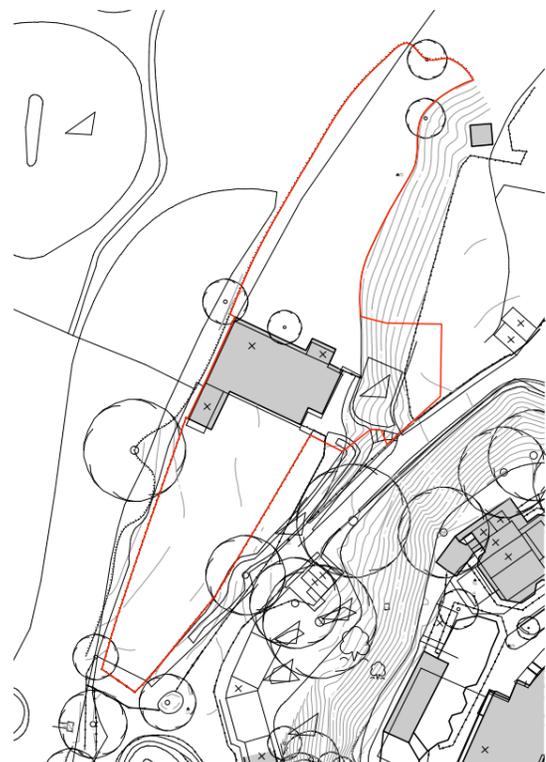
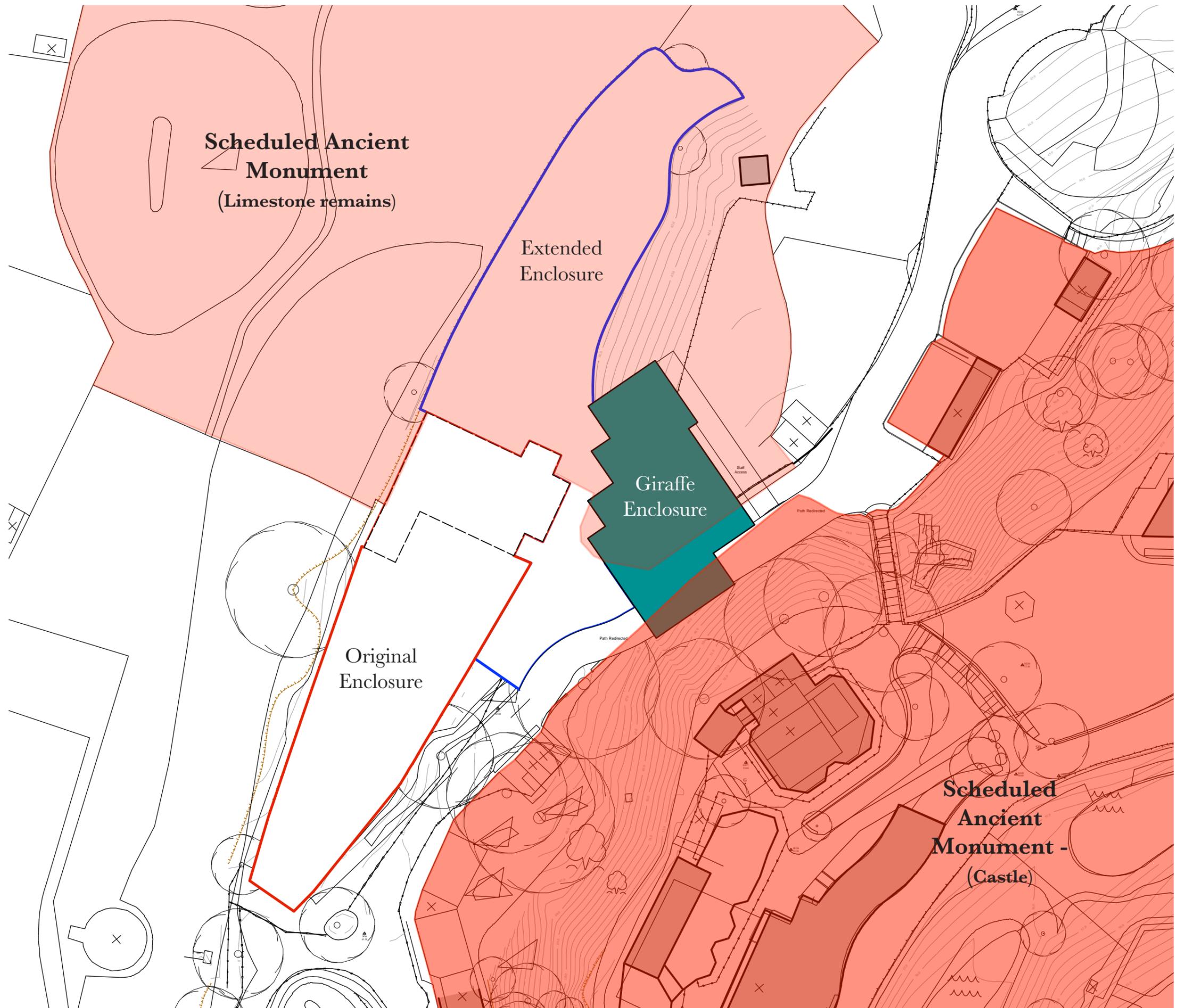
10.2 Proposal

10.2.2 Site Plan

The proposal for the giraffe house is to extend its current location into the storage area to the north allowing of the current giraffe enclosure to form a larger courtyard for the giraffes to roam.

The main aim of this building is to provide a sustainable alternative to the existing giraffe house. The house has to be kept at an optimum temperature for the comfort of the giraffes and therefore is one of the most energy exhaustive buildings at the Zoo.

The purpose of this enclosure is currently for giraffes however it is proposed that this enclosure could adapt to suit alternative species as the Zoo diversifies.

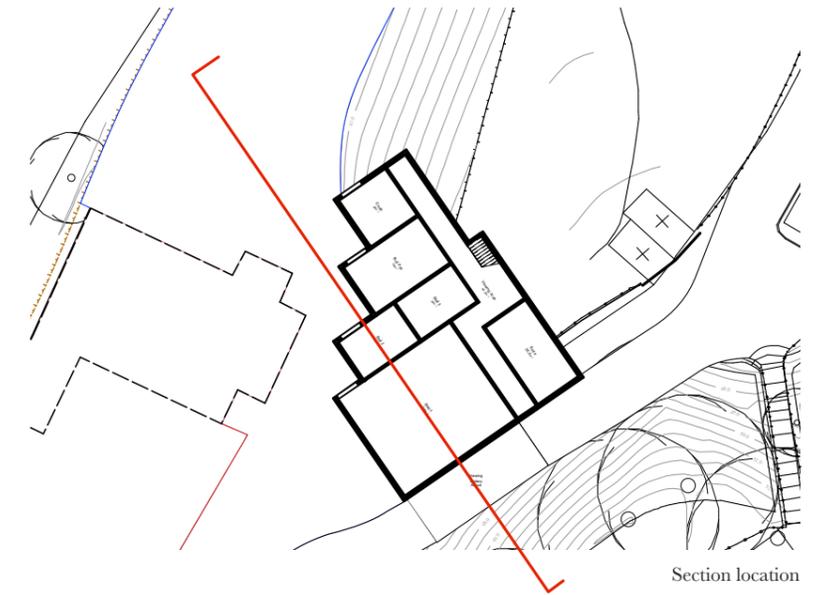


10.0 Giraffe House

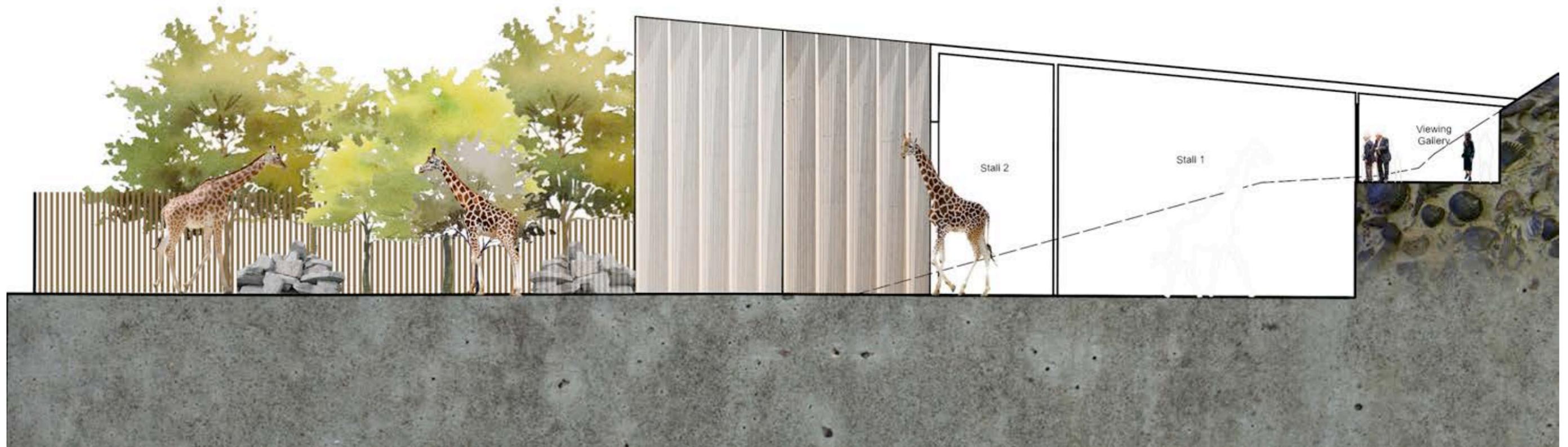
10.2 Proposal

10.2.3 Section

The giraffe house is an opportunity for the Zoo to become an exemplar in sustainability by providing an enclosure which suits the animals and visitors and provides the best habitat possible with a low carbon footprint. It is also a demonstration of how the structures within the Zoo can benefit from the Heritage asset that the geology provides by sinking the pavilion into the Castle Hill and making use of the heat within the ground whilst offering visitors an understanding of the important geological nature of the Hill.



Section location



Proposed site section

10.0 Giraffe House

10.2 Proposal

10.2.4 Sustainability

Drawing from the precedents, the fundamental sustainable principles have been adopted to provide a sustainable solution.

Solar gain

By positioning the building with a north-south orientation, the building can maximise the amount of solar gain, this combined with a carefully selected materials ensures that the building absorbs the sun's energy during the day and then dispatches it slowly at night which drastically reduce your energy requirement.

Passive Design

Submerging the building within the ground allows the building to be insulated which will allow the building to keep cool in the summer and warm in the winter.

Renewable Energy Source

Invest in a renewable energy source such as PV cells which could be mounted across the roof, providing lighting.

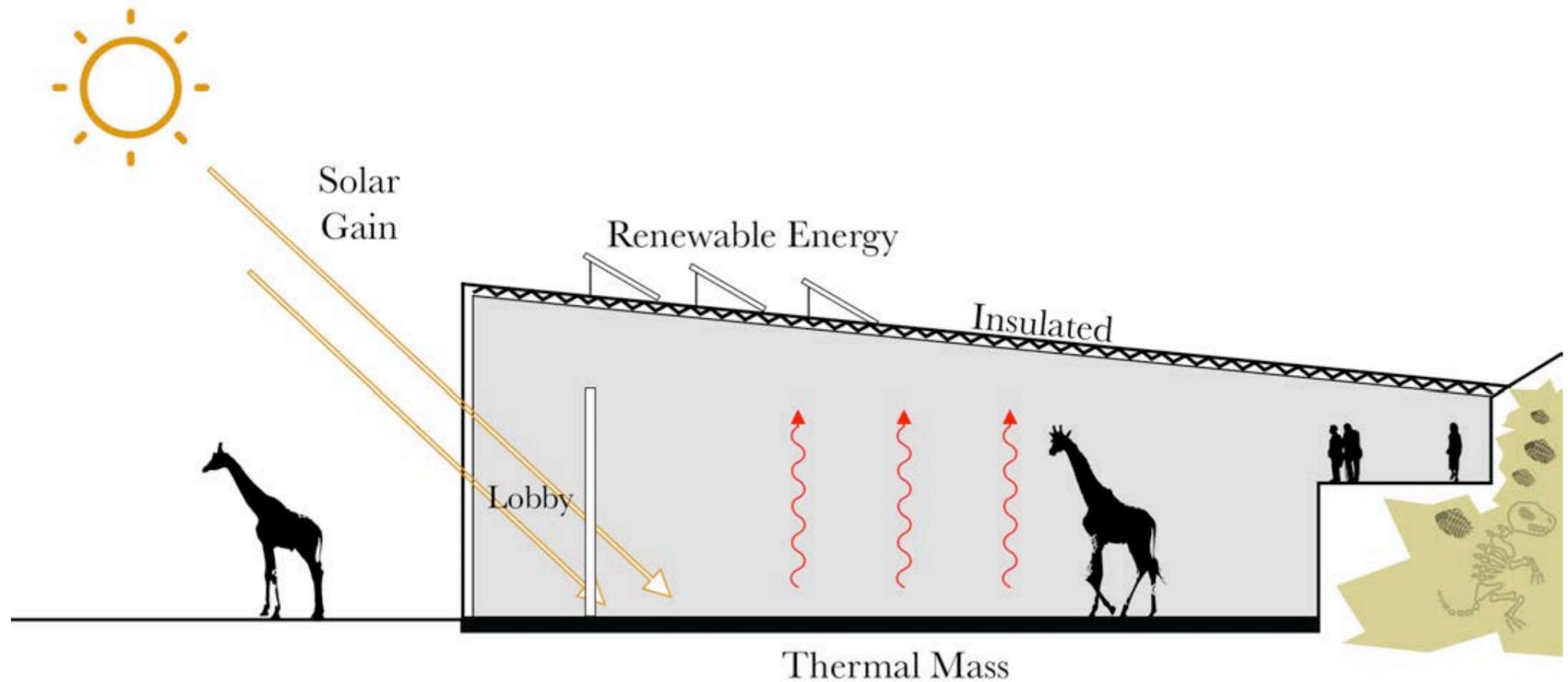
Local and Natural Materials

Utilise local and natural materials allowing the building to have a reduced carbon footprint

Layout

The layouts indicate a lobby area within the giraffe house to ensure the heat gained will not escape as it currently does.

These sustainable decisions will ensure reduced running costs saving the Zoo extensive future costs.



10.0 Giraffe House

10.2 Proposal

10.2.5 Costs

BPN have proposed two options for the Giraffe House. DZG issued BPN with an example of a previous giraffe house constructed at Bristol Zoo Gardens, using this as a basis for the required accommodation the two options provide the same accommodation. The first option, retains the original zoo path sighting the giraffe house against this to view into the stables at high level.

The second option extends the Castle hillside into the enclosure, allowing the path to expose the original bedrock of the Castle, linking the geological nature of Castle Hill back into the visitor experience. The proposal shown within the document is the second option.

Each cost is divided by existing site works and new construction works. The budget costs are based on the drawn scheme. Please refer to appendix C for the cost breakdown.

The overall project cost for Option 1:

£832,561.47 (Excluding VAT)

The overall project cost for Option 2:

£1,030,358.71 (Excluding VAT)

10.0 Giraffe House

10.2 Proposal

10.2.6 Funding

Two options have been costed, one at c. £832k and the other at c. £1030k. In addition to potential LEP funding (see below) this project looks best suited to DZG led external fundraising and use of its own capital budget. The Welsh Mountain Zoo crowd funding project highlighted in the Funding Appendix may provide a model approach. In the context of a wider multi project Castle Hill vision initiative we can imagine that this could be one of a number of components of a package of WMCA/BCLEP funding. Depending on energy requirements, it might also appeal to a low carbon funder (see Funding Appendix).

	£000's	HLF	WMCA/ BCLEP	HE	ERDF	T&F	Pvte
Tectors Phase 2	2,015	/		/		/	
Giraffe House	1,030		/			/	
Stores Cavern	756	/	/			/	
Visitor and Education Facility	3,844		/			/	
Round House/Lodge	78	/	/			/	
Dudley Castle	3,558	/	/	/		/	
Woodland Management	1,425	/	/		/	/	
Woodland Platform	187	/	/		/	/	
High Ropes and Forest Coaster	500						/
Total Cost	13,393						

Note: Table excludes VAT, professional fees, construction inflation, capital allowances, land remediation, risks, relief, grants, etc. For breakdown of costs please refer to the appendices.

10.0 Giraffe House

10.2 Proposal

10.2.7 Project Specific Issues / Proposed Programme

This can be completed as a independent piece of construction.

Below we have provided timescales for each RIBA work stage for the proposed the Giraffe House proposals.

RIBA Work Stages

Stage 0 - Strategic Definition

- Completed during development of funding document

Stage 1 - Preparation and Brief

- Completed during development of funding document

Stage 2 - Concept Design

- 4 weeks to develop proposals

Stage 3 - Developed Design

- 12 weeks for the production of drawings
- 13 weeks for statutory consent

Stage 4 - Technical Design

- 20 - 24 weeks to produce technical drawings
- 4 weeks for tender

Stage 5 - Construction

- 20-24 weeks in construction

Stage 6 - Handover and Close Out

- 4 weeks for fit out and interpretation

Total predicted timescales: **85 weeks**

Project Specific Issues

- Pre - application discussions** - Historic England, Natural England and the LPA to be held.
- Consent** - Planning Consent.
- Reports** - Ground investigation / Ecology / Bat Surveys / Structural Survey / Escape Strategy / Ventilation - Air Quality / Heating model - renewables / Archaeology
- Other** - Demolition of existing, Site access, Excavation of Geology.

Intentionally Left Blank



11.0 Tectons

11.0 Tectons

11.1 Introduction

The 12 listed Lubetkin-designed concrete structures at Dudley Zoo, built between 1936 and 1937, are the greatest collection of surviving Tecton buildings in the world and some of the most important modern movement buildings in the UK. As time has moved on and zoological practices have changed some of the Tecton structures have become unused and left to serve only as monuments.

Extract taken from <http://tectons.dudleyzoo.org.uk>

History

The Zoo was developed by the Earl of Dudley, along with Ernest Marsh (of Marsh and Baxter's) and Captain Frank Cooper (owner of the famous Oxford Marmalade Company) through the transfer of Cooper's collection at Oxford Zoo, along with additions from elsewhere. It provided an important addition to Dudley and also provided an income to help maintain the site of the Castle and its ruins.

The buildings by Berthold Lubetkin and the Tecton Partnership (including Structural Engineer Ove Arup) are one of the finest collections of early modernist structures in Britain (although they are frequently described as Art Deco), using innovative construction techniques.

Philosophy

The Tecton structures represent Lubetkin's particular philosophy to create buildings that offer both delight and inspiration, beyond a mere functional enclosure or shelter. Each providing a unique form designed for its purpose and location. Their design and construction are overtly scientific and technical in nature emphasising man's mastery over nature (seen in contrast as the animals within them) and the advancement of man into a new age of scientific achievement after the dark days of the Great War. They were also held up for creating a Zoo without bars, whilst their scale and placement was designed with consideration for the need to avoid overt intrusion into views of the Castle ruins.

They would also be considered as forming an important part of the development of the architecture of pleasure that emerged during the early 20th century in response to increased leisure time and disposable wealth among working people, providing fast and sensational leisure experiences.

Restoration

In the 1980s the worsening condition of the Tecton buildings required remedial work, particularly focused on the Polar Bear enclosure but continuing deterioration resulted in the buildings being placed on the World Heritage Fund's Watch List in 2009. In 2015, Dudley Zoological Gardens undertook a programme of repairs and interpretation of the buildings and important architectural reinstatement supported by funding from the Heritage Lottery Fund. The entrance gates with its distinctive 'S' shaped interlocking canopies, the former Safari Café (now the entrance and gift shop), the Bear Ravine and Kiosk No.1 have been successfully completed. It is very important that the repair and maintenance programme continues as a rolling programme in order to address the deterioration of the remaining Tecton buildings and prevent further deterioration.

Architectural Character

The Zoo buildings at Dudley Zoological Gardens represent a clear and conscious break with the building traditions of the past. They were ostensibly designed to have a low profile, i.e. with few overt vertical elements and with long horizontal lines that tie them into the contours of the hillside to avoid competing for prominence with the Castle. They are, however, showpiece buildings that were intended to illustrate the early 20th century as a time of new ideas, scientific innovation and greater freedom for people to seek out entertainment and spectacle. Whilst they would be buildings of special interest individual, for their contribution to the development of British architecture in the 20th century, as a collection they been recognised by the World Monument Fund as of international interest.

Materials

The ferro-concrete construction of the Tecton buildings emphasising clean modern architecture as a break with the vernacular materials of the past. Lubetkin used these to form sweeping curvaceous lines that are reminiscent of the shapes of earthworks and the landform of the Castle and even some of the Castle buildings, such as the drum towers of the keep, but contrasting with the more angular elements. Details such as handrails were designed as a part of the buildings and are of consistent design between buildings, helping to draw them together as a single group. However the concrete is not without texture and was moulded to have a ridged surface that may add to its strength but also contributes a suitable play of light and shadow across the frontage that is a positive aesthetic effect. The use of glazed tile of the Tropical Bird House and part of the Polar Bear Pit has a similar effect – these are not dull concrete buildings. The materials also include unpainted galvanised steel and aluminium chosen as a new material that allowed the metal to show through without requiring a protective coat of paint, which would have been innovative and 'clean' when it was first used. The renovation of the Zoo buildings is allowing some of the paint to be stripped back allowing the buildings to be re-presented in a more authentic manner, displaying the materials of their construction as they were intended to.

Landscape Management

Self seeded woodland means that trees within the Zoo are blocking views to and from the Tecton buildings or views of the Castle structures; this is particularly notable at the Queen Mary, former Castle Restaurant. A tree management strategy, prepared through consultation with the Council would help to promote a strategic programme of work and reduce the need for repeated notification of the Council of works to trees in the conservation area. This could set out a ten-year programme of management to maintain a healthy and attractive tree stock that provides a wooded parkland character and an arcadian setting to the Zoo and Castle that will support its economic activity as a major visitor attraction.

11.0 Tectons

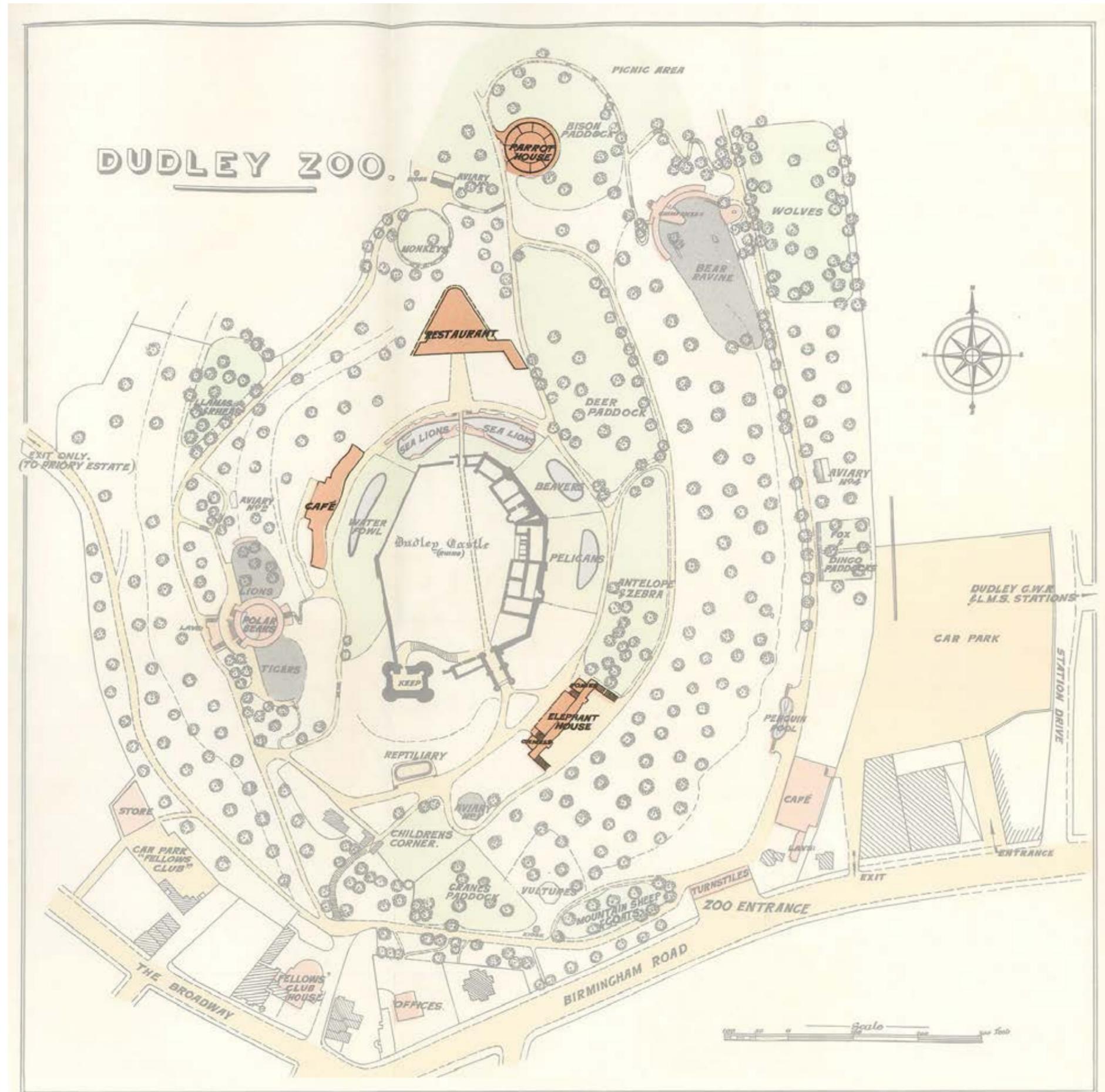
11.1 Introduction

Of the twelve remaining structures, four are used for their original purpose, four have been reused for another role and four are unused. All of which are Grade II and Grade II* listed structures.

The aim of the brief is to reveal the significance of the Tecton collection within Dudley Zoo. Four structures have been identified that are need of repair, architectural reinstatement and require analysis and application of future use.

The four Tectons that have been identified are:

- **The Discovery Centre**
(Former Moat Cafe)
- **The Elephant House**
- **Queen Mary**
(Former Castle Restaurant)
- **Tropical Bird House**
(Former Parrot House)



Intentionally Left Blank



12.0 Queen Mary

(Former Castle Restaurant)

12.0 Queen Mary

12.1 Existing

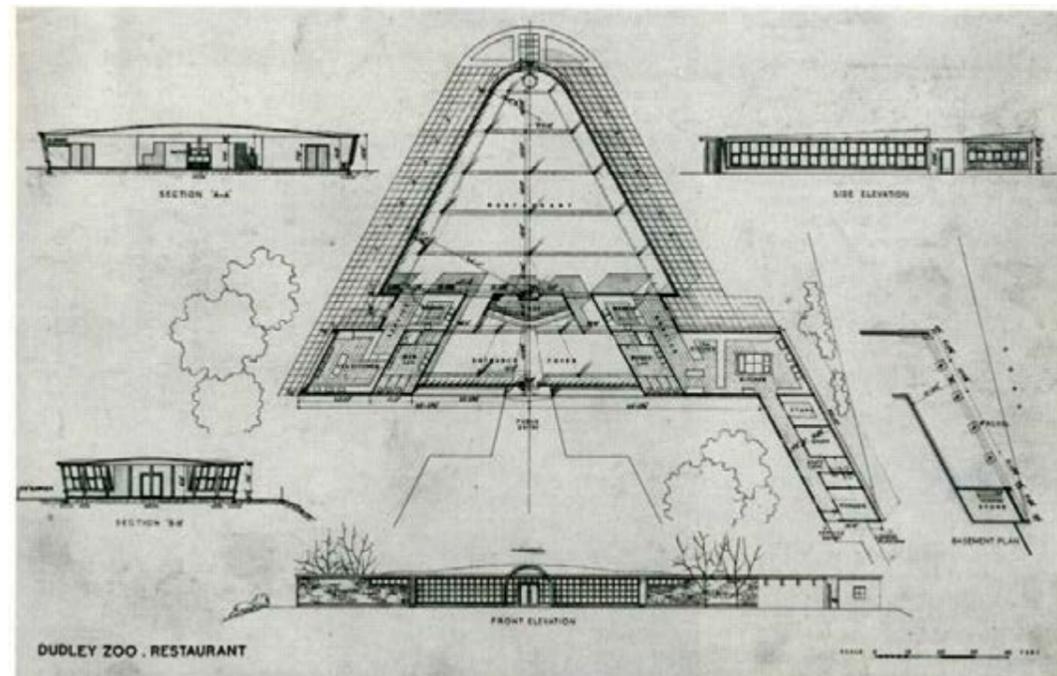
12.1.1 Historic Information

Original

The Castle Restaurant, as one of the buildings whose design would need to be sensitive to the Castle due to its proximity, was of necessity a single-storey structure, with a deliberately low profile so as not to disturb the view from the monument. Its shape was determined by the symmetrical triangular apex of the limestone outcrop on which it is set, which gives dramatic views over the steep, wooded slopes of Castle Hill to the north. The main elevation looks out onto the sea lion pools, with the curtain wall of the Castle rising beyond it. This front elevation is constructed mostly by glazed timber lattice frames, the two end sections being uniquely rubble stone, to reflect its sensitive location. The restaurant was the main space for formal eating in the zoo, with two cafés providing snacks. The seating area to the rear of the bar was used in the 1960s and 1970s as a venue for evening entertainment, including dancing and live acts. There have been accretive changes associated with changing needs, and some upgrading and alteration of the internal fittings to reflect modern usage, as it remains in use as a restaurant.

The building was put on the statutory list as Grade II

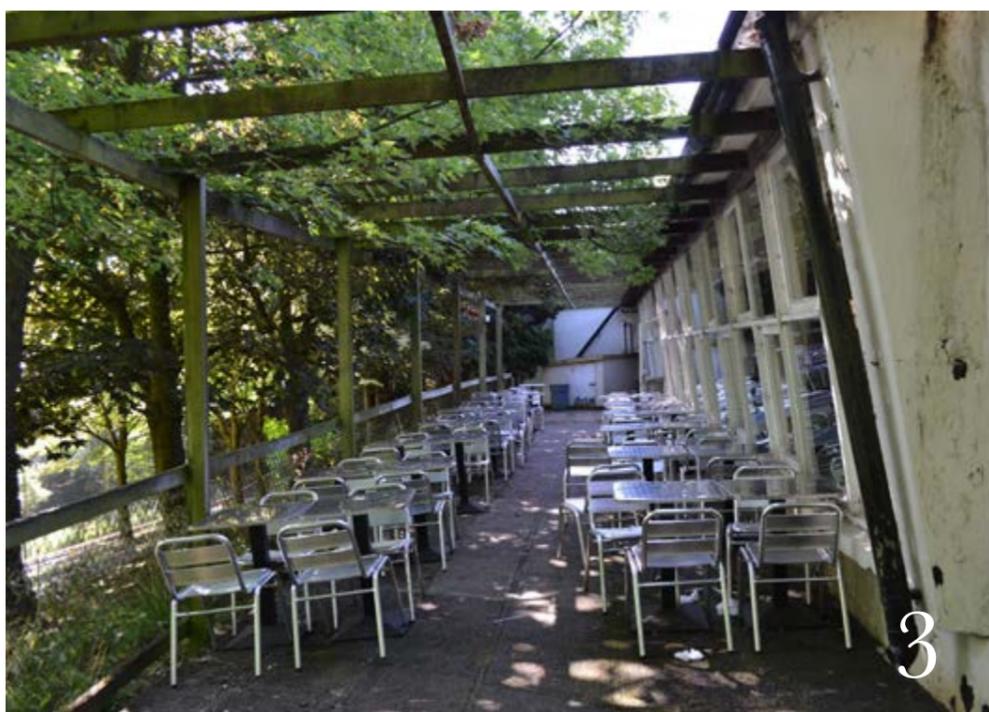
Extract taken from <http://tectons.dudleyzoo.org.uk/collection/queen-mary/>



12.0 Queen Mary

12.1 Existing

12.1.2 Location & Condition



12.0 Queen Mary

12.2 Proposal

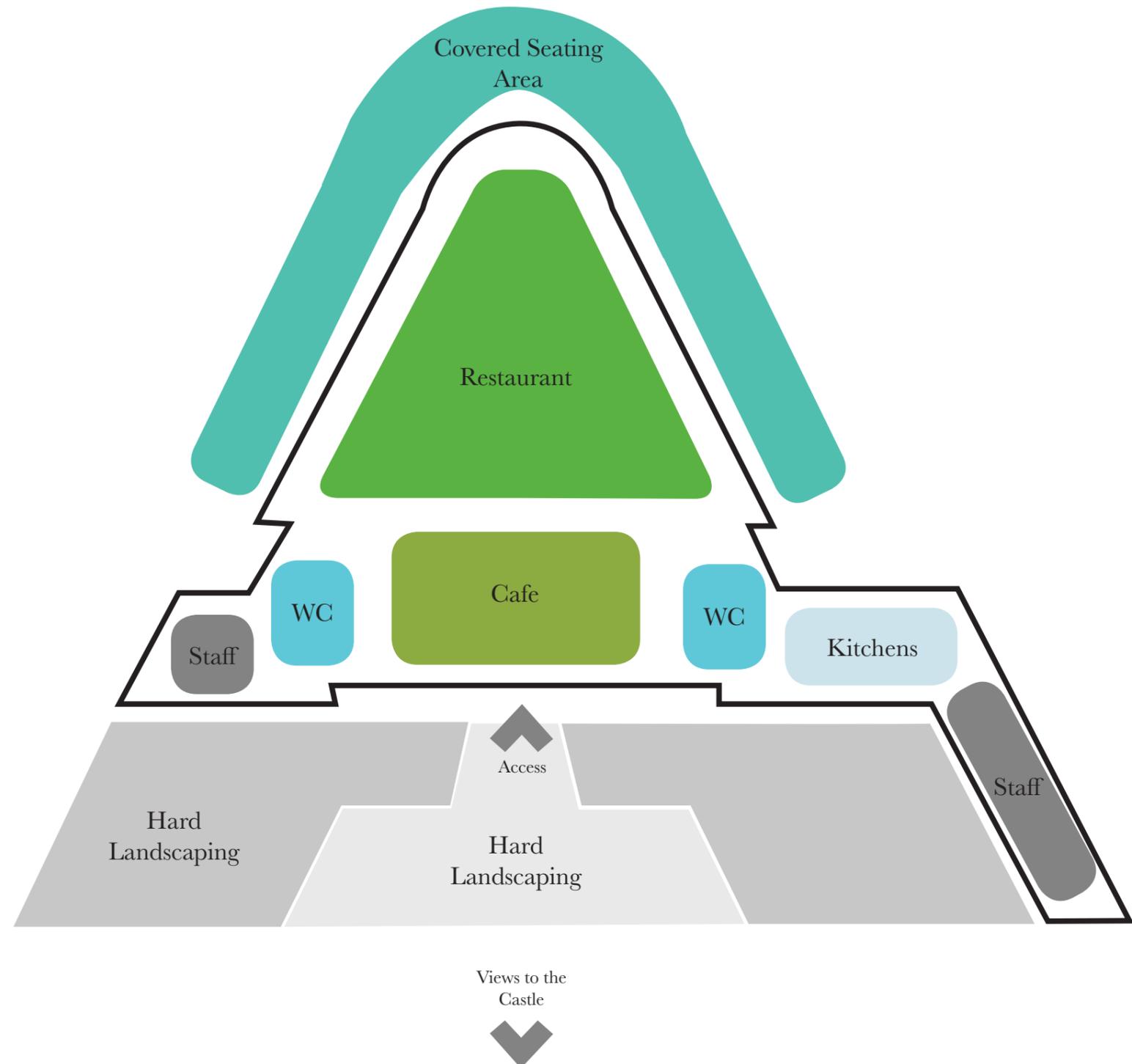
12.2.1 Concept

It is proposed that the Queen Mary maintains its function as a restaurant and cafe space but allows for further commercial use including evening uses and private functions. This can be achieved by extending the seating capacity to the external spaces, utilising periphery and the existing landscape between the Castle gateway and the entrance to Queen Mary.

The buildings orientation means that it benefits from a southern aspect on its approach into the Castle and propose that the landscaping and building would benefit by extending its function space into this landscape.

The bow of the Queen Mary allows for seating externally but the overgrown trees and aspect limit the amount of sunlight that can reach these areas. We propose to shelter this space with a covered seating area that surrounds the northern elevation and manage the tree line to allow better lines of sight across the Zoo and the woodland beyond.

The intention is to reflect and interpret the original floorscape to the south facade as per the original layout. This area is currently used as the turning circle for zoo transport and therefore must allow for functionality at the same time as respecting its heritage.



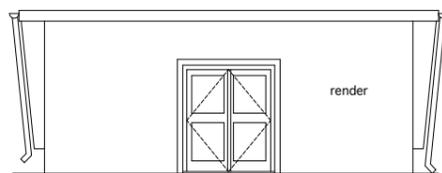
12.0 Queen Mary

12.2 Proposal

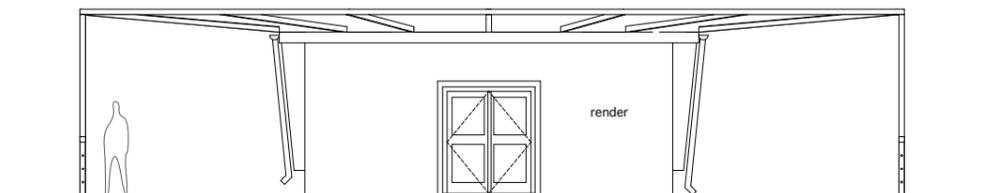
12.2.2 Floor Plans

Proposed alterations to the Queen Mary are as follows:

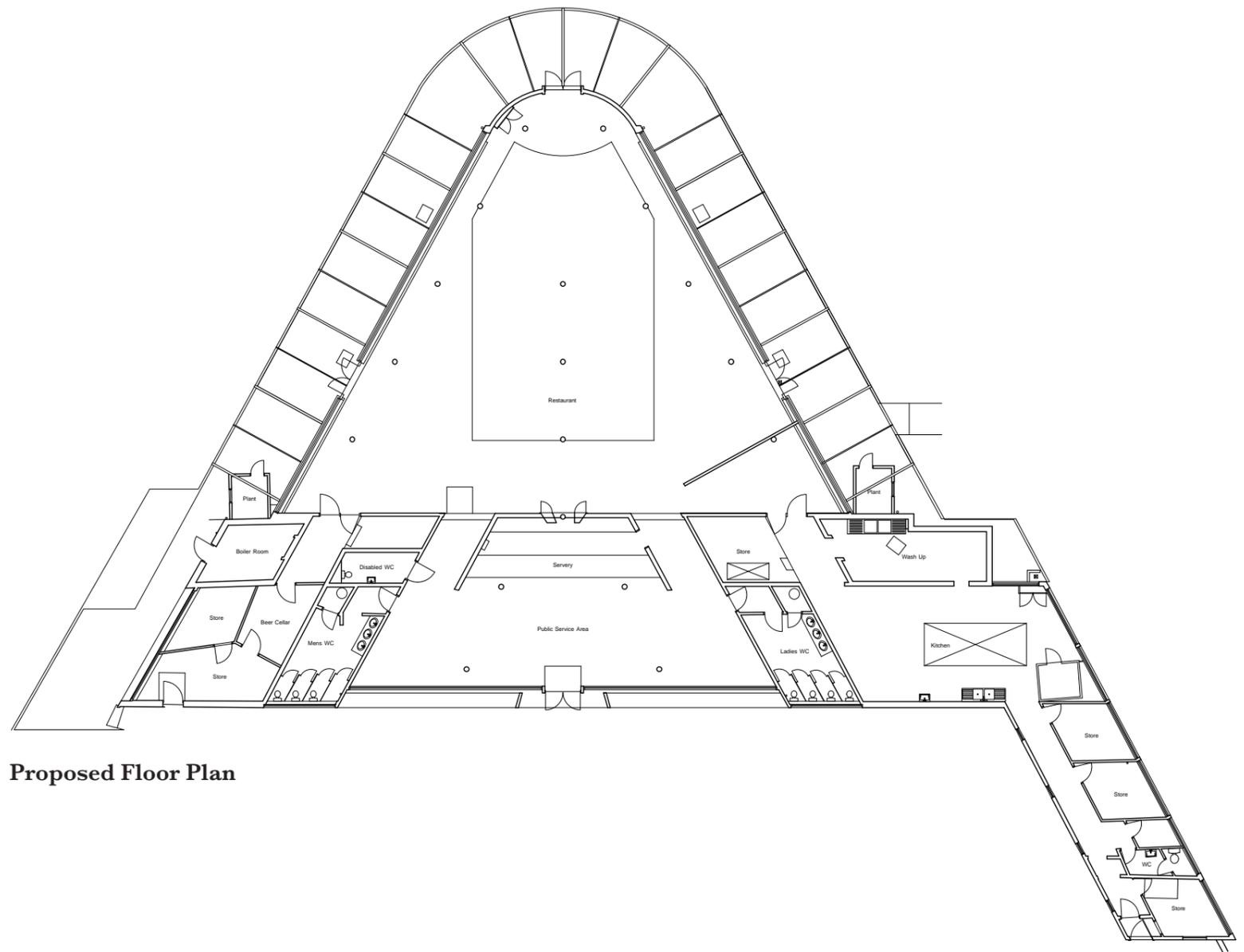
1. Provide a new canopy to the periphery of the cafe.
2. Re-evaluate the setting of the Queen Mary, in particular its hard and soft landscaping. Reinststate more sympathetic hard and soft landscaping based on the original 1930's design.
3. Reinstatement of original architectural features to the elevations, reinstatement of the original Lubetkin colour scheme, undertake necessary concrete repairs and remove unsympathetic alterations added to the roof'. Consider use of tables and chairs that are more sympathetic to the period of the building.



Existing Elevation



Proposed Elevation

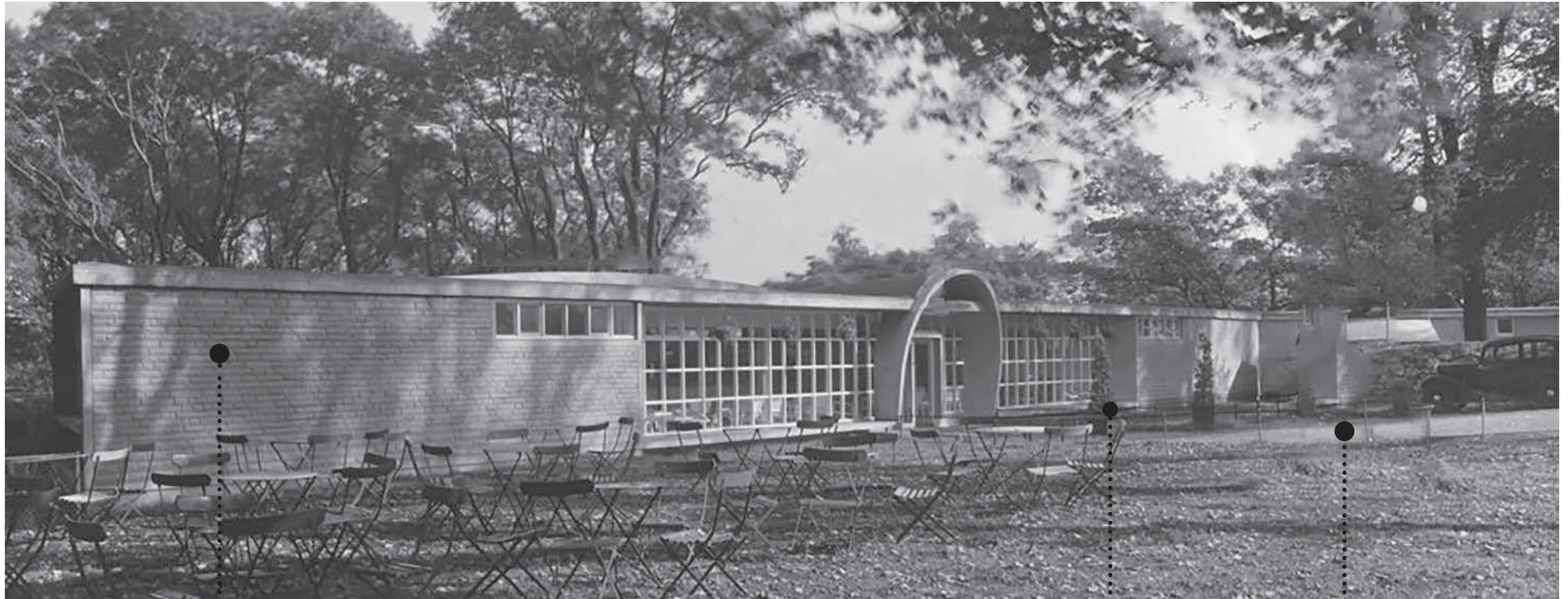


Proposed Floor Plan

12.0 Queen Mary

12.2 Proposal

12.2.3 Perspective



Reinstate Coursed Stonework



Soft Landscaping



Hard Landscaping

12.0 Queen Mary

12.2 Proposal

12.2.4 Costs

The building will retain its original function as a cafe and further increase its capacity which allows furthering commercial uses for evening use. BPN have proposed covered seating along the perimeter of the building,

Each cost is divided by alteration works to existing Elephant House and refurbishment and fit out works. The budget costs are based on the drawn scheme and Stand Consulting Engineers photos and drawings. Please refer to the appendix C for the cost breakdown.

The overall project cost:

£517,193.33 (Excluding VAT)

NOTE: (FIGURE TO BE UPDATED, following removal of front canopy)

12.0 Queen Mary

12.2 Proposal

12.2.5 Funding

As with the Phase 1 Tectons HLF project, a strong focus on training and the use of apprenticeships would be appropriate. May be there could be an opportunity to work in a structured way with one of the architectural schools that were involved in the Phase 1 project as a primary activities partner?

Historic England was a key stakeholder in the Phase 1 project. Given its success from HE's perspective, it is possible that there could be a case for HE's financial assistance being made, although the agency might argue that its support should be prioritised towards the Castle project.

Although no Trust or Foundation funding was sought for the Phase 1 scheme, as other matched funding was already available, given the success of the previous scheme and the high national profile and accolades that the Tecton project has enjoyed, this may strengthen the case for seeking such support, but given completion for funding and competing projects within the overall vision, such as the Castle, this may be inappropriate.

DZG would be expected to contribute to the costs of the project as the long leasehold owner of the Tectons, as it did in the Phase 1 project.

Queen Mary (former Castle Restaurant). The works are costed at c. 517k including fees. Within this overall total the formation of a new covered canopy is (c. £122k) These may be ineligible.

	€000's	HLF	WMCA/BCLEP	HE	ERDF	T&F	Pvte
Tectons Phase 2	2,015	/	/	/	/	/	/
Graffe House	1,030	/	/	/	/	/	/
Stores Cavern	756	/	/	/	/	/	/
Visitor and Education Facility	3,844	/	/	/	/	/	/
Round House/Lodge	78	/	/	/	/	/	/
Dudley Castle	3,558	/	/	/	/	/	/
Woodland Management	1,425	/	/	/	/	/	/
Woodland Platform	187	/	/	/	/	/	/
High Ropes and Forest Coaster	500	/	/	/	/	/	/
Total Cost	13,393						

Note: Table excludes VAT, professional fees, construction inflation, capital allowances, land remediation, risks, relief, grants, etc. For breakdown of costs please refer to the appendices.

12.0 Queen Mary

12.2 Proposal

12.2.6 Project Specific Issues / Proposed Programme

This can be completed as a independent piece of construction.

Below we have provided timescales for each RIBA work stage for the proposed the Queen Mary proposals.

RIBA Work Stages

Stage 0 - Strategic Definition

- Completed during development of funding document

Stage 1 - Preparation and Brief

- Completed during development of funding document

Stage 2 - Concept Design

- 4 weeks to develop proposals

Stage 3 - Developed Design

- 8 weeks for the production of drawings
- 13 weeks for statutory consent

Stage 4 - Technical Design

- 8 weeks to produce technical drawings
- 4 weeks for tender

Stage 5 - Construction

- 24 weeks in construction

Stage 6 - Handover and Close Out

- 4 weeks for fit out and interpretation

Total predicted timescales: **65 weeks**

Project Specific Issues

- Pre - application discussions** - Historic England, Twentieth Century Society, Natural England and the LPA to be held.
- Consent** - Scheduled Monument / Planning Consent / Listed Building
- Reports** - Concrete condition / Ecology / Structural Survey / M&E survey / Drainage Survey / Conservation Management plan / Building Fabric Condition Survey
- Other** - Strip out - Alternative access or building operation during construction, Loss of Revenue, Site access.

Intentionally Left Blank



13.0 Discovery Centre

(Former Moat Cafe)

13.0 Discovery Centre

13.1 Existing

13.1.1 Historic Information

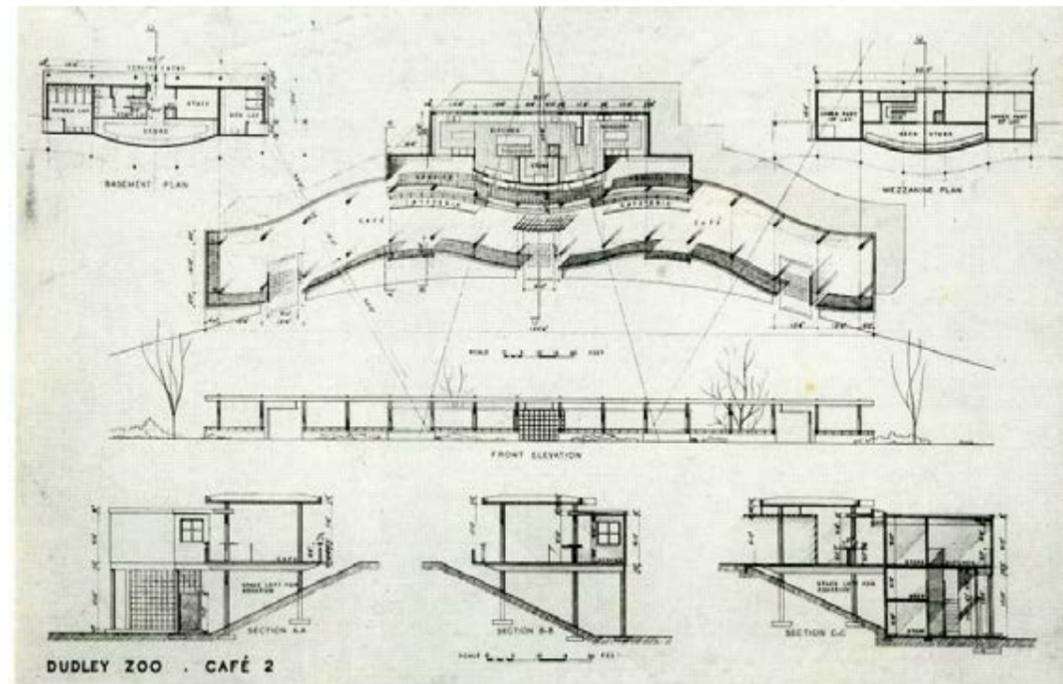
Original

The building was constructed as the Moat Café, one of three eating places within the zoo grounds. It was built on a site not originally considered suitable for a building, given that it would interrupt a key view of the Castle from the moat. However, it was eventually accepted by the Ministry of Works' Inspector and in order to lessen its impact, the structure was made as light and transparent as possible. The buildings plan was constructed with flowing, serpentine curves, designed to break up the building's outline when viewed from above. The side and rear elevations were glazed, while the front of the building was left open to increase its transparency. The entrances were indicated by floating slabs suspended from the roof. The main space, between the entrances, was defined by the use of a low wall with coping raised on short steel struts – the standard walling used for viewing areas and some enclosures around the zoo, which was one of the unifying details of the Tecton structures. The building, like all the large structures Tecton designed for the zoo, took advantage of the steep slopes of the Castle grounds. In this instance allowing the front of the building that directly faces the Castle to have a low, single-storey scale but with a second basement level at the rear, to house stores, beer cellar and staff rooms. The basement level was accessible externally from a service road at the rear of the building. The single-storey front section was built on stanchions, to allow for the subsequent excavation of the land on which it stands to accommodate an aquarium, though this plan was never carried out.

The building has undergone significant alteration since its completion, most crucially in the infilling and glazing of the entire front elevation; it now functions as the Zoo's education centre.

The building was put on the statutory list as Grade II.

Extract taken from <http://tectons.dudleyzoo.org.uk/collection/moat-cafe/>



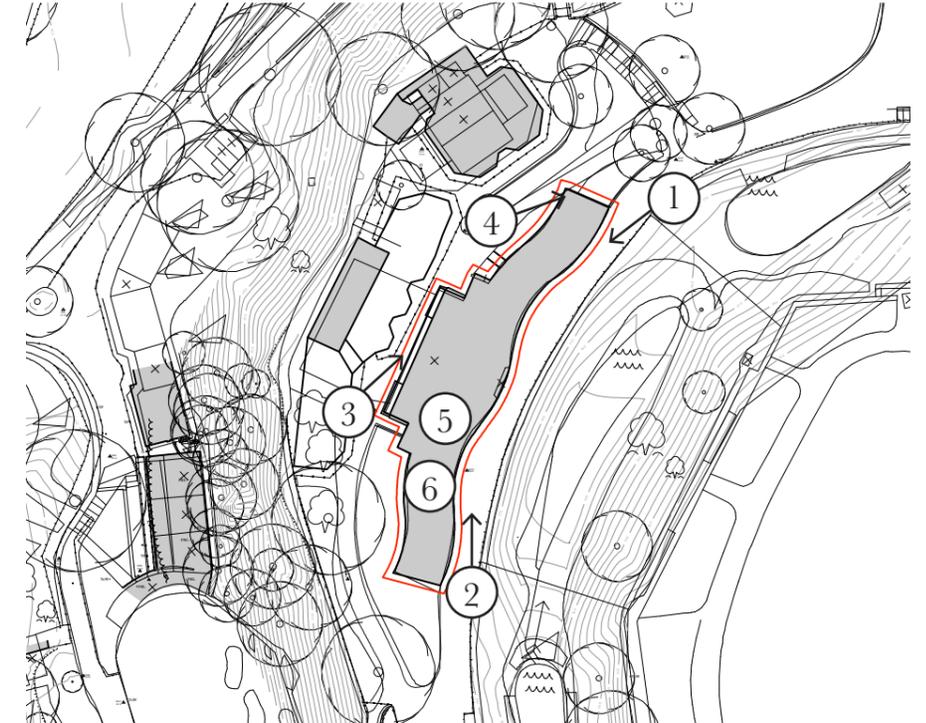
13.0 Discovery Centre

13.1 Existing

13.1.2 Location & Condition

The now named Discovery Centre is currently used for educational and learning purposes and an animal store to the rear and lower floors. The external facades have now been completely enclosed, providing an internal wall to the rear covering the lattice window frames. Each room within the Discovery Centre was painted by a local artist to create themes within each room. The lower floors are currently being used for storage, staff facilities and existing toilets, which are no longer in use.

The facility is no longer suitable for its current use and requires upgrading. The location also makes access for education difficult and is proving unsustainable.



13.0 Discovery Centre

13.2 Proposal

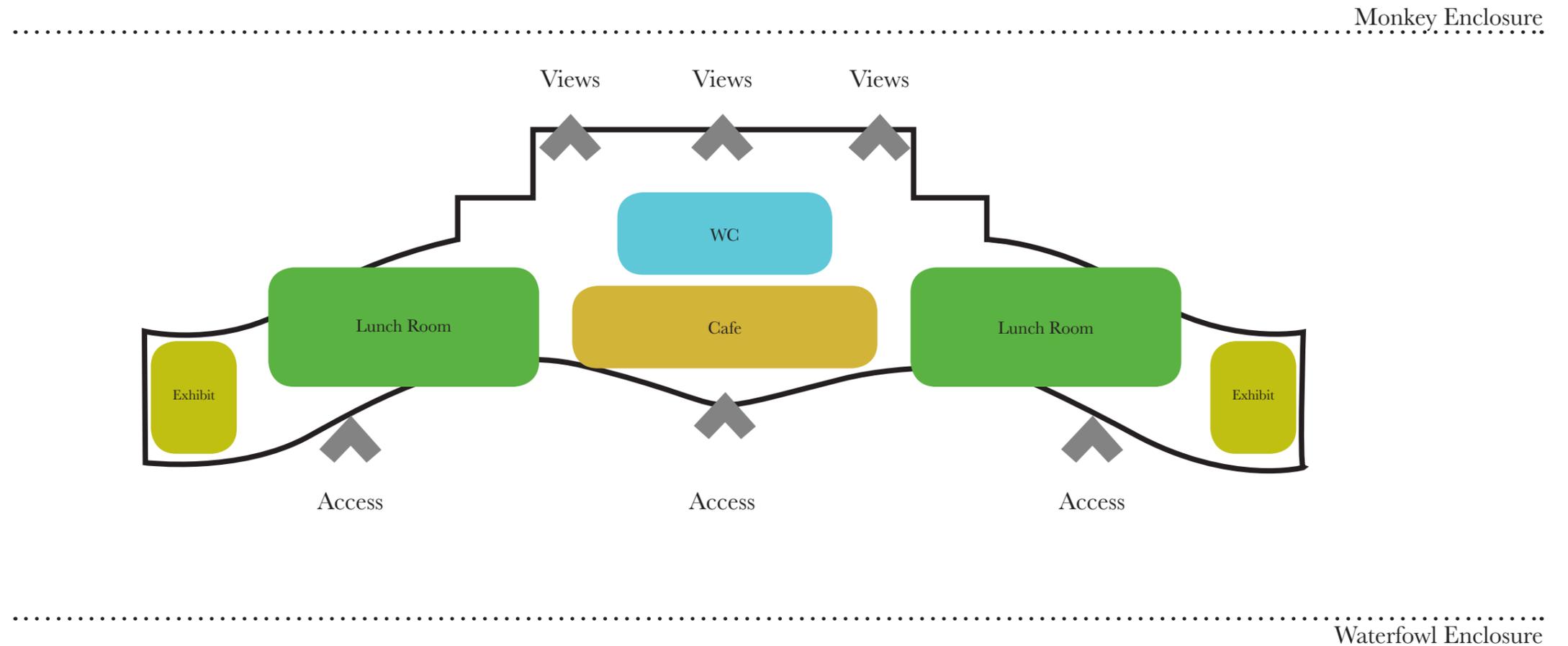
13.2.1 Concept

To alleviate the heavy demand at the Queen Mary restaurant, proposals seek to provide an extension to the dining facilities at the Zoo. This offer increases the dining offer for visitors and potentially increases revenue for DZG. The proposals therefore seek to provide dining areas and lunch rooms reinstating this space as a covered catering and eating facility.

The diagram indicates the basic layout proposal, reinstating a central cafe space with support space such as toilets and kitchen facilities and small animal exhibits at both ends.

In its current location there is opportunity to expose the views in the monkey and tiger enclosure to the rear of the Discovery Centre, this allows opportunity for a viewing gallery. The proposals will enable reinstatement of lost architectural details and of the original Lubetkin colour scheme as well as necessary concrete repairs.

The toilet facilities will include a Changing Places complex care adult changing facility. This building is the most suitable, located at the top of the Zoo and will enable us to offer facilities at the base and top of the site.



13.0 Discovery Centre

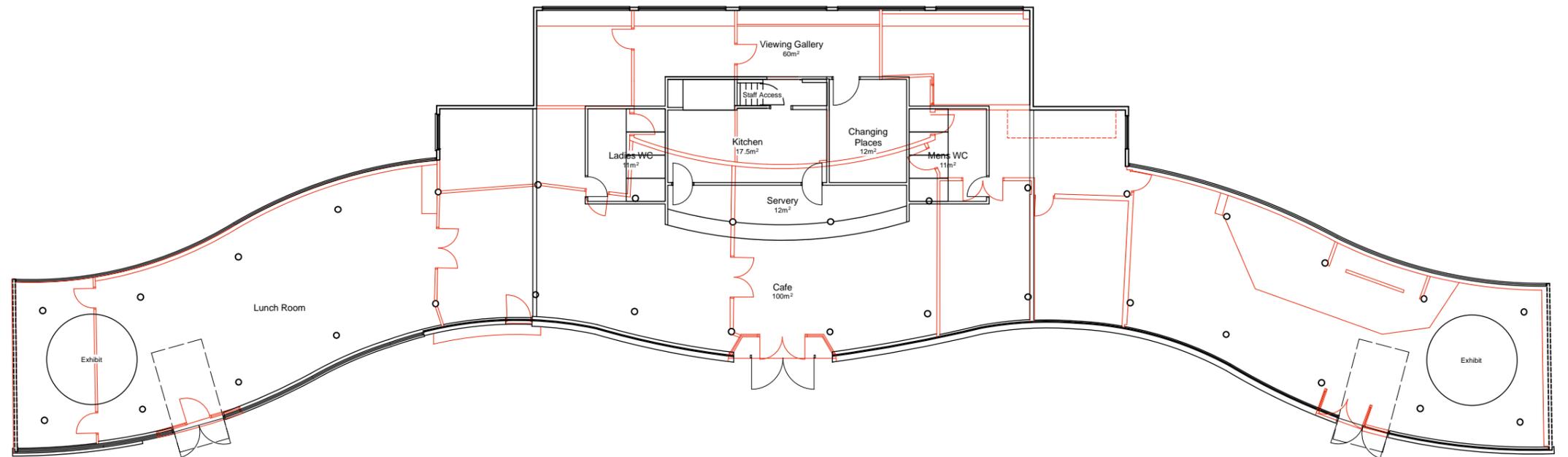
13.2 Proposal

13.2.2 Floor Plan

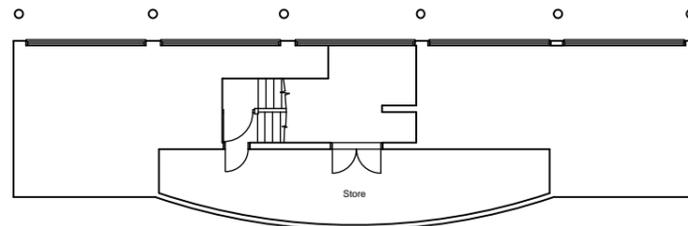
The following alterations have been proposed for the internal layout:

1. Exhibit space to be provided
2. Lunch areas within each wing of the centre
3. Kitchen, toilets and cafe to be centralised
4. Viewing platform to the rear of the building
5. Reinstate entrance slabs as per original design

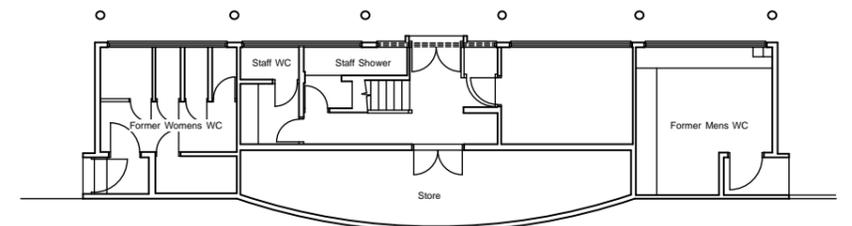
The red lines depict the proposed removal of modern amendments.



Upper Level Plan



Mezzanine Floor Plan

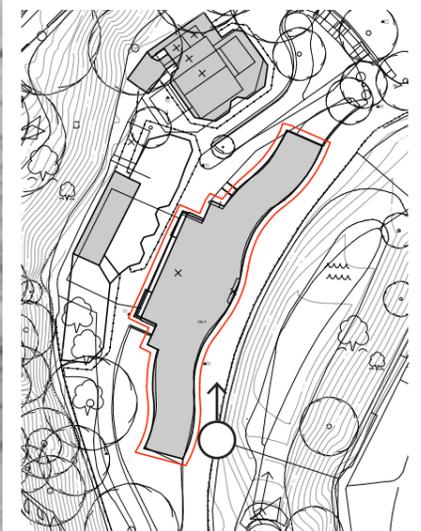


Lower Floor Plan

13.0 Discovery Centre

13.2 Proposal

13.2.3 Perspective



13.0 Discovery Centre

13.2 Proposal

13.2.4 Costing

The building is currently being used as an educational building and proposes to reinstate its original purpose as an eating facility and include small exhibits.

Each cost is divided by alteration works to existing Discovery Centre and refurbishment and fit out works. The budget costs are based on the drawn scheme and Stand Consulting Engineers photos and drawings. Please refer to the appendix C for the cost breakdown.

The overall project cost:

£1,014,281.40 (Excluding VAT)

13.0 Discovery Centre

13.2 Proposal

13.2.5 Funding

As with the Phase 1 Tectons HLF project, a strong focus on training and the use of apprenticeships would be appropriate. May be there could be an opportunity to work in a structured way with one of the architectural schools that were involved in the Phase 1 project as a primary activities partner?

Historic England was a key stakeholder in the Phase 1 project. Given its success from HE's perspective, it is possible that there could be a case for HE's financial assistance being made, although the agency might argue that its support should be prioritised towards the Castle project.

Although no Trust or Foundation funding was sought for the Phase 1 scheme, as other matched funding was already available, given the success of the previous scheme and the high national profile and accolades that the Tecton project has enjoyed, this may strengthen the case for seeking such support, but given completion for funding and competing projects within the overall vision, such as the Castle, this may be inappropriate.

DZG would be expected to contribute to the costs of the project as the long leasehold owner of the Tectons, as it did in the Phase 1 project.

The Discovery Centre (former Moat Café). The works are costed at c. £1014k. Some of the fit out may not be eligible for HLF funding, but it would be premature to make a judgement at this stage.

	€000's	HLF	WMCA/BCLEP	HE	ERDF	T&F	Pvte
Tectons Phase 2	2,015	/	/	/	/	/	/
Giraffe House	1,030	/	/	/	/	/	/
Stores Cavern	756	/	/	/	/	/	/
Visitor and Education Facility	3,844	/	/	/	/	/	/
Round House/Lodge	78	/	/	/	/	/	/
Dudley Castle	3,558	/	/	/	/	/	/
Woodland Management	1,425	/	/	/	/	/	/
Woodland Platform	187	/	/	/	/	/	/
High Ropes and Forest Coaster	500	/	/	/	/	/	/
Total Cost	13,393						

Note: Table excludes VAT, professional fees, construction inflation, capital allowances, land remediation, risks, relief, grants, etc. For breakdown of costs please refer to the appendices.

13.0 Discovery Centre

13.2 Proposal

13.2.6 Project Specific Issues / Proposed Programme

This can be completed as a independent piece of construction.

Below we have provided timescales for each RIBA work stage for the proposed Discovery Centre proposals.

RIBA Work Stages

Stage 0 - Strategic Definition

- Completed during development of funding document

Stage 1 - Preparation and Brief

- Completed during development of funding document

Stage 2 - Concept Design

- 4 weeks to develop proposals

Stage 3 - Developed Design

- 8 weeks for the production of drawings
- 13 weeks for statutory consent

Stage 4 - Technical Design

- 8 weeks to produce technical drawings
- 4 weeks for tender

Stage 5 - Construction

- 24 weeks in construction

Stage 6 - Handover and Close Out

- 4 weeks for fit out and interpretation

Total predicted timescales: **65 weeks**

Project Specific Issues

- Pre - application discussions** - Historic England, Twentieth Century Society, Natural England and the LPA to be held.
- Consent** - Scheduled Monument / Planning Consent / Listed Building
- Reports** - Concrete condition / Ecology / Structural Survey / M&E survey / Drainage Survey / Conservation Management plan / Building Fabric Condition Survey
- Other** - Demolition of existing, Site access, Retention of Education Facilities following handover to contractor.

Intentionally Left Blank



14.0 Elephant House

14.0 Elephant House

14.1 Existing

14.1.1 Historic Information

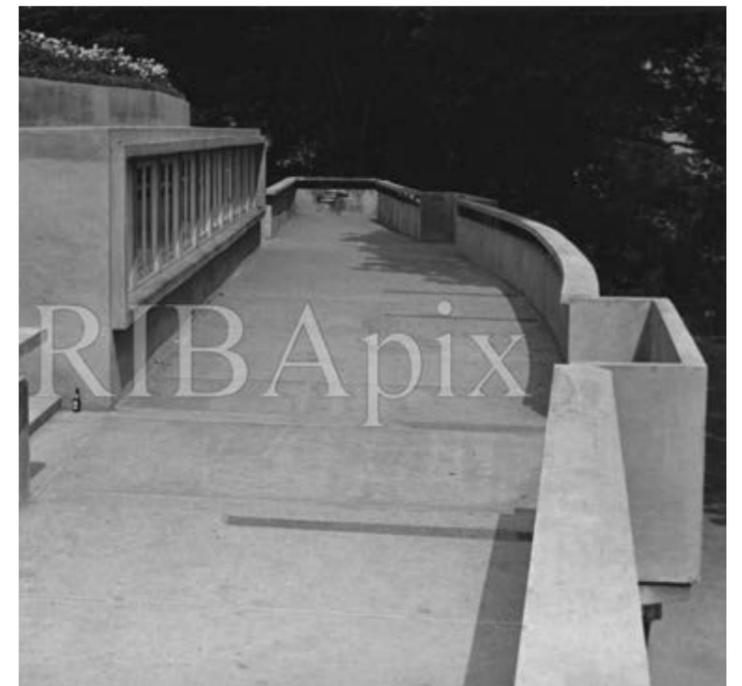
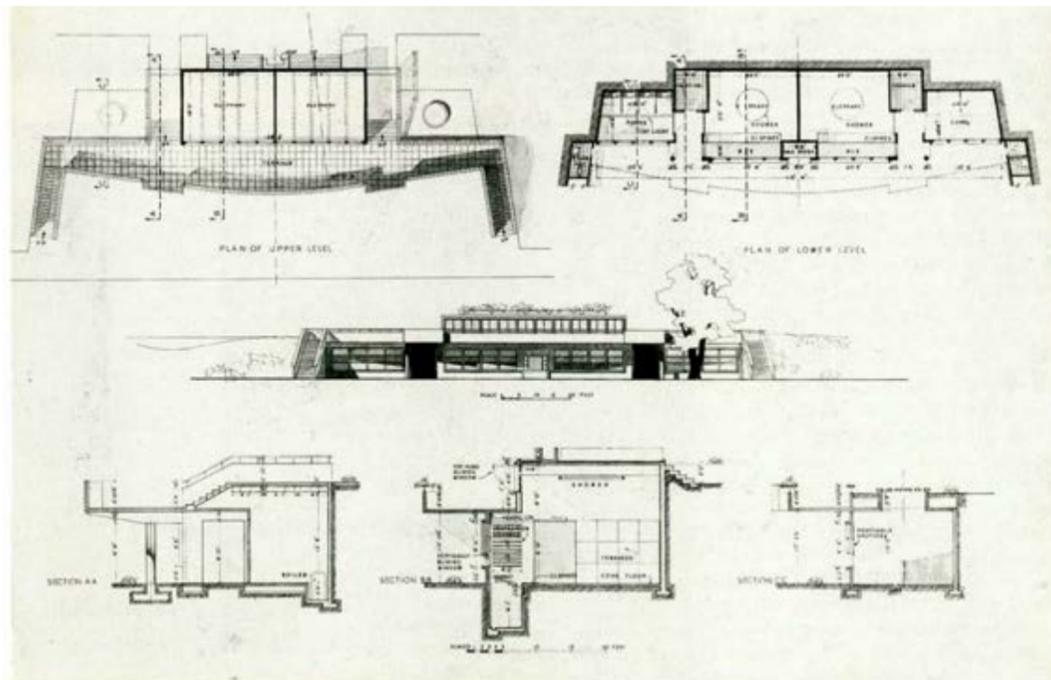
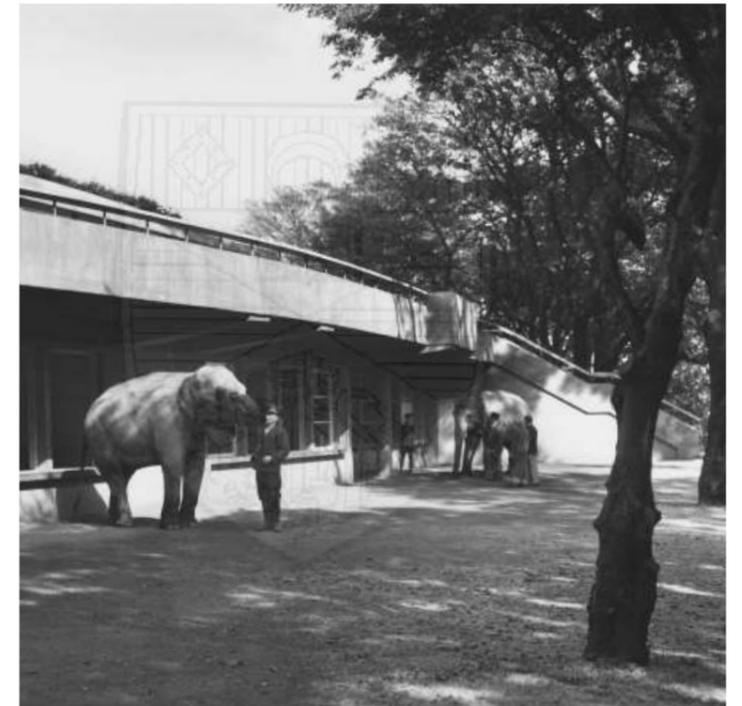
Original

The Elephant House was built not only to house elephants, but camels and Shetland ponies. Constructed in one of the more sensitive locations in the zoo, just outside the Castle moat and in clear view from the ruins above, the Elephant House was built into the slope between two terraces, in order to be as unobtrusive as possible. The roof of the building doubles as a viewing platform, and is level with the higher terrace; integral stairs at either end of the range give access to the lower terrace, which has access to the interior of the building. Like the other large animal houses, it therefore had a dual purpose, both housing and displaying animals, and also cleverly linking the paths and roads at different levels. It was so arranged that the animals can be viewed either from below the canopy or from the gallery above. Top lighting gave the animals the maximum of the South sun. They were not separated from the public by heavy bars as was usual, but by a ditch and a row of spikes. As the Elephant's tenderest part is the sole of his foot, he will avoid hurting himself on the spikes and is so kept within his enclosure. For the same reason, the floors in this house were covered with rubber. Artificial rain was provided from the ceiling as an Elephant's skin has a tendency to become dry in summer.

The building has undergone significant alterations since its completion, including changes to its lower-level main elevation. It ceased to house elephants in 2003.

The building was put on the statutory list as Grade II

Extract taken from <http://tectons.dudleyzoo.org.uk/collection/elephant-house/>



14.0 Elephant House

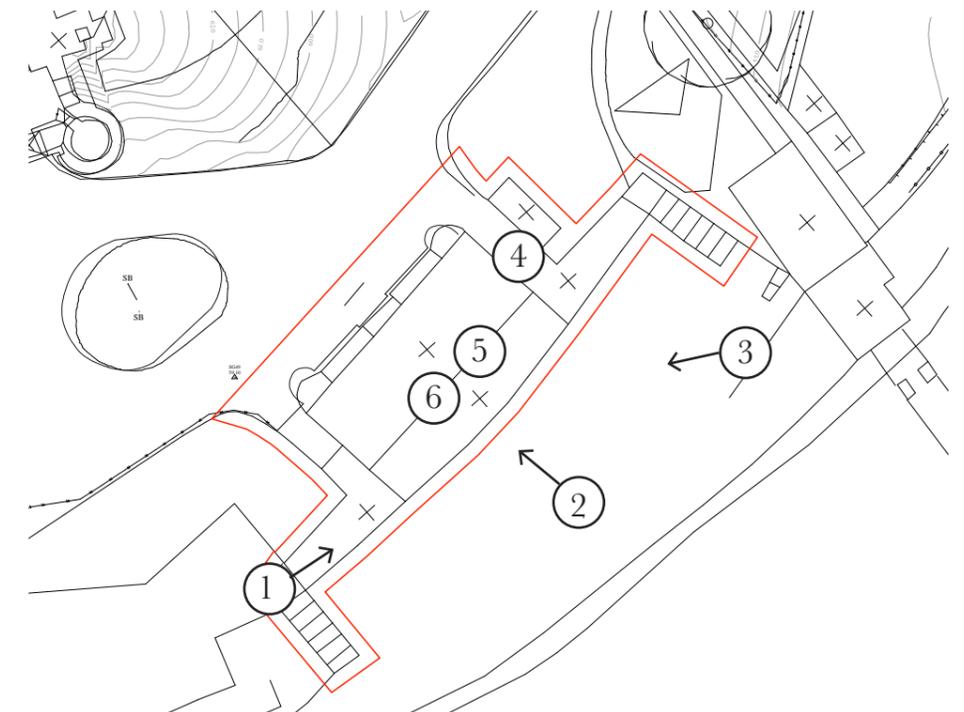
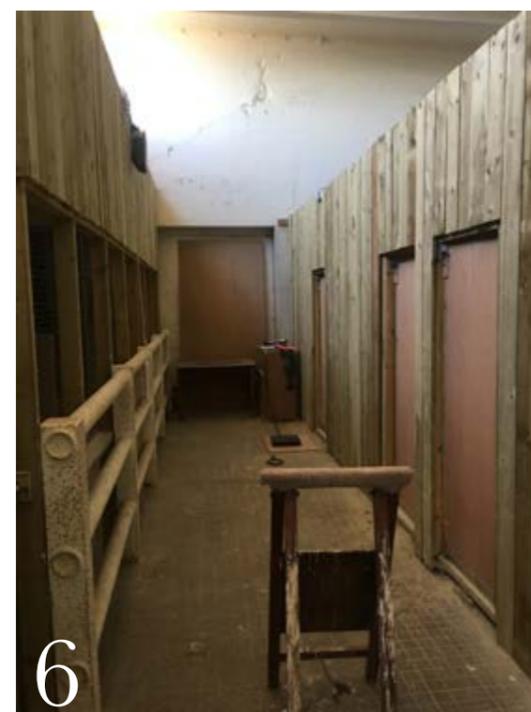
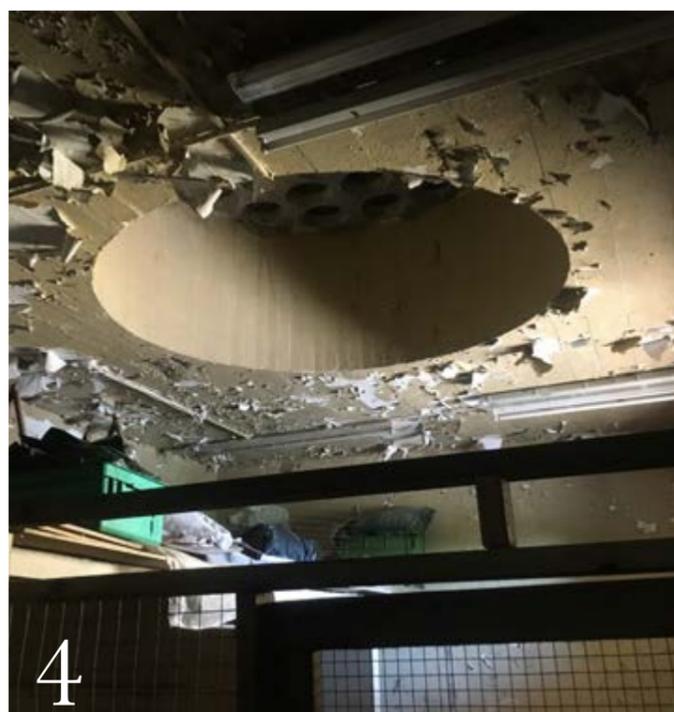
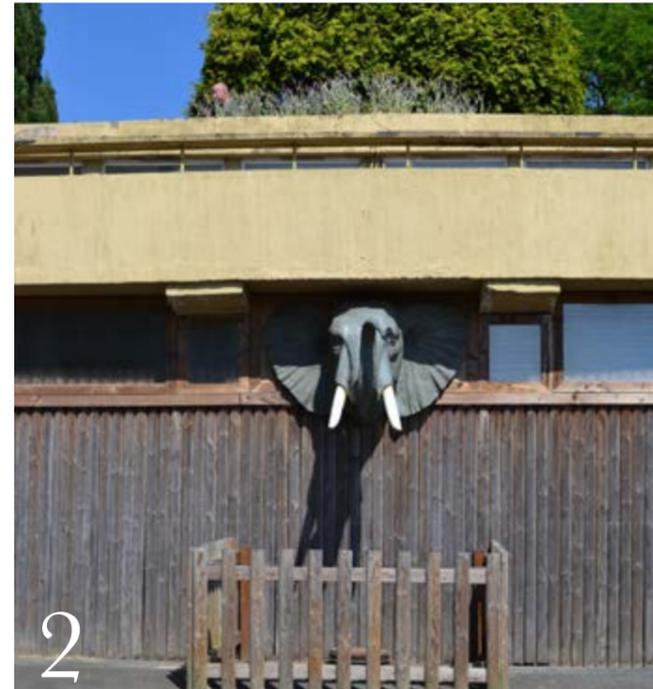
14.1 Existing

14.1.2 Location & Condition

This is a dominant building on Castle Hill, seen from Birmingham Road, one of the first Tectons a visitor sees when entering into Dudley from Birmingham.

The Elephant House is located at the top of the chair lift and the entrance to the Castle. The enclosure is no longer used as an Elephant House and this ceased in 2003.

Below are internal and external images of the Elephant House in its current state. The enclosure is currently being used as an enclosure for large birds and a general store.



Existing site plan

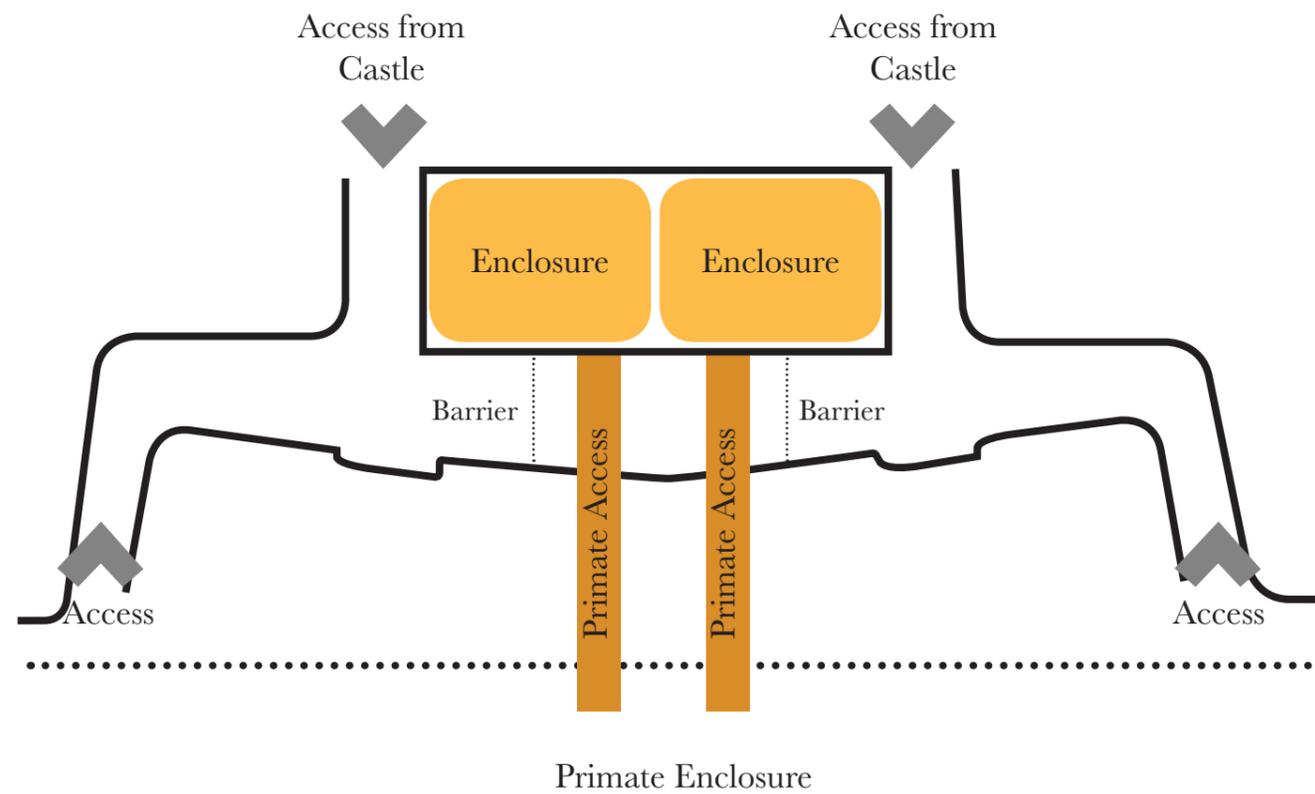
14.0 Elephant House

14.2 Proposal

14.2.1 Concept

The brief proposes that the former Elephant House could be adapted for housing primates, becoming an extension to the primate enclosure which is currently on the bank alongside the chairlift.

To gain access to the enclosure BPN have proposed high level tunnels from the bank over the original elephant courtyard and along to the upper terrace windows, gaining access at high level within the house. This allows visitors to watch from within the courtyard and upper terrace. The proposals will enable reinstatement of lost architectural details and original Lubetkin colour scheme as well as necessary concrete repairs.



14.0 Elephant House

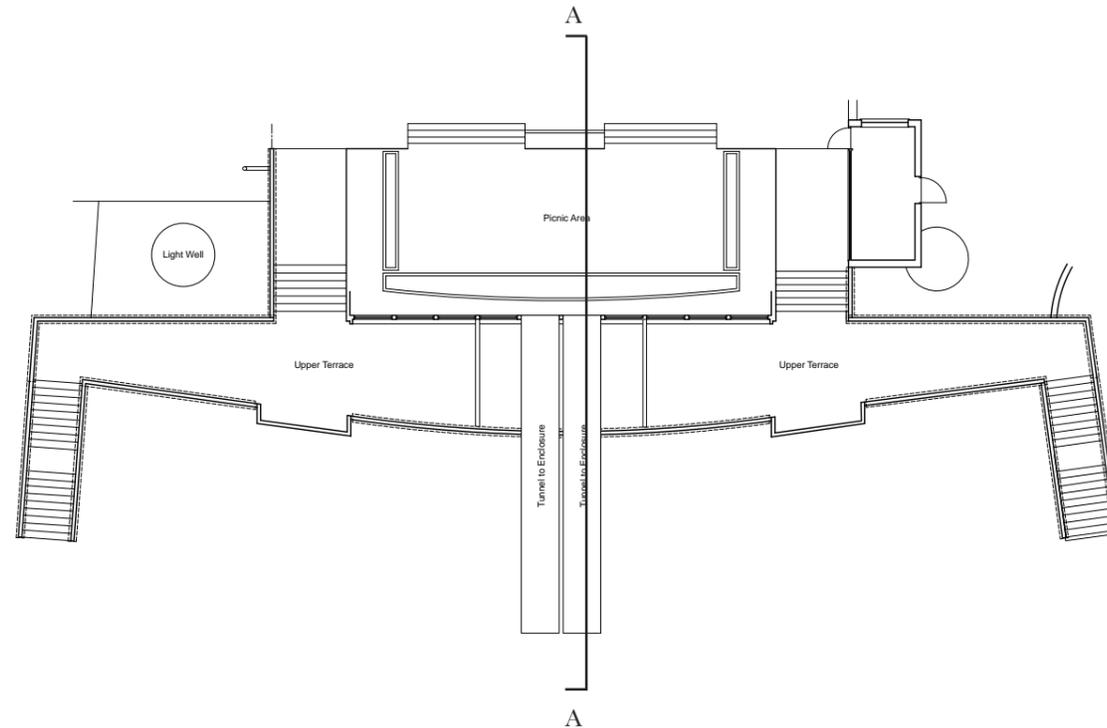
14.2 Proposal

14.2.2 Floor Plans

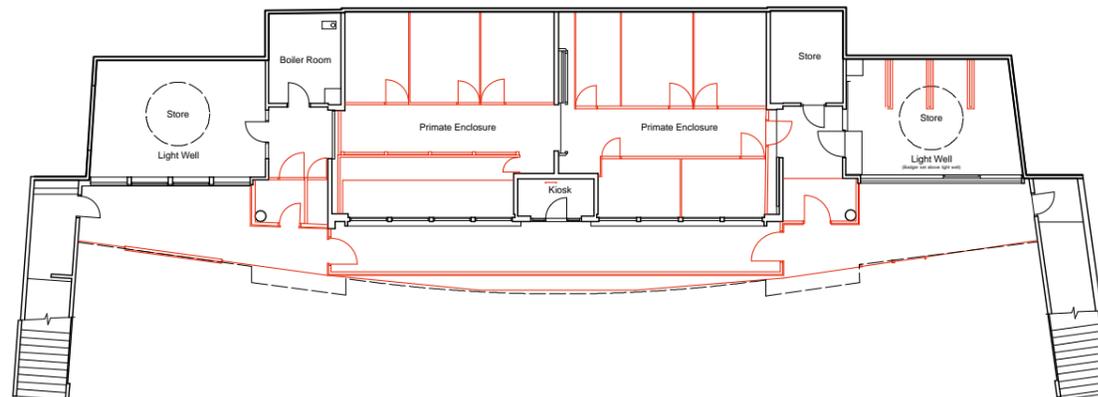
Proposed alterations to the Elephant House are as follows:

1. New primate enclosure within the existing elephant enclosures
2. Proposed tunnels at high level from former elephant enclosure to primate hill enclosure
3. Barriers to be provided aside high level tunnels
4. Reinstatement of original architectural features to the elevations and original Lubetkin colour scheme and necessary concrete repairs

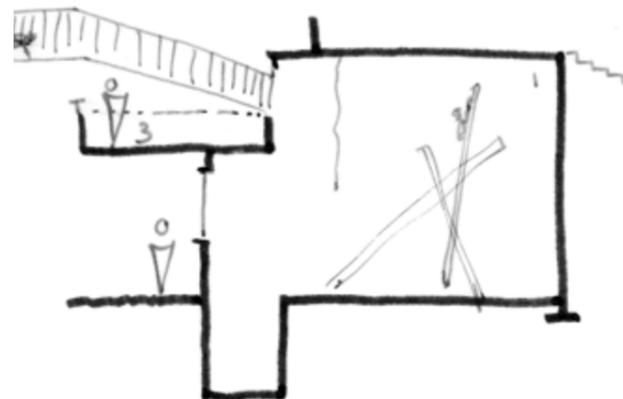
The red lines depict the proposed removal of modern amendments. The proposed plans will provide two large spaces with a central dividing wall.



Upper Level Plan

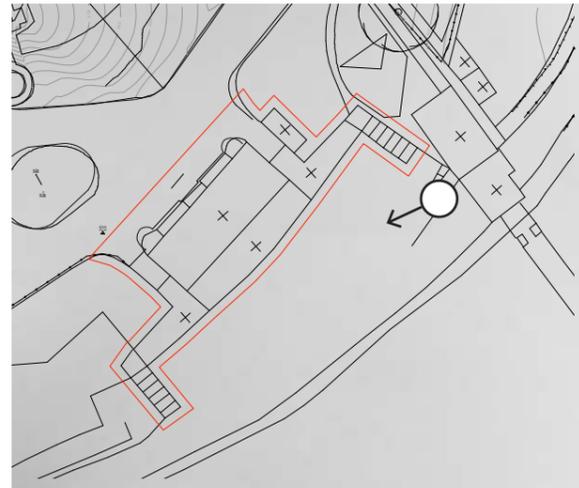


Lower Level Plan



Section A-A

Perspective view location



14.0 Elephant House

14.2 Proposal

14.2.3 Perspective



14.0 Elephant House

14.2 Proposal

14.2.4 Costs

The building is currently being used as an animal store and proposes to adapt the animal enclosure to a primate enclosure with high level tunnels into the hillside enclosure.

Each cost is divided by alteration works to existing Elephant House and refurbishment and fit out works. The budget costs are based on the drawn scheme and Stand Consulting Engineers photos and drawings. Please refer to the appendix C for the cost breakdown.

The overall project cost:

£241,511.61 (Excluding VAT)

14.0 Elephant House

14.2 Proposal

14.2.5 Funding

As with the Phase 1 Tectons HLF project, a strong focus on training and the use of apprenticeships would be appropriate. May be there could be an opportunity to work in a structured way with one of the architectural schools that were involved in the Phase 1 project as a primary activities partner?

Historic England was a key stakeholder in the Phase 1 project. Given its success from HE's perspective, it is possible that there could be a case for HE's financial assistance being made, although the agency might argue that its support should be prioritised towards the Castle project.

Although no Trust or Foundation funding was sought for the Phase 1 scheme, as other matched funding was already available, given the success of the previous scheme and the high national profile and accolades that the Tecton project has enjoyed, this may strengthen the case for seeking such support, but given completion for funding and competing projects within the overall vision, such as the Castle, this may be inappropriate.

DZG would be expected to contribute to the costs of the project as the long leasehold owner of the Tectons, as it did in the Phase 1 project.

The Elephant House – c. £241k. Some works, such as forming tunnels to the enclosure, some M&E and other new plant may not be eligible – same point as above.

	€000's	HLF	WMCA/BCLEP	HE	ERDF	T&F	Pvte
Tectons Phase 2	2,015	/	/	/	/	/	/
Graffe House	1,030	/	/	/	/	/	/
Stores Cavern	756	/	/	/	/	/	/
Visitor and Education Facility	3,844	/	/	/	/	/	/
Round House/Lodge	78	/	/	/	/	/	/
Dudley Castle	3,558	/	/	/	/	/	/
Woodland Management	1,425	/	/	/	/	/	/
Woodland Platform	187	/	/	/	/	/	/
High Ropes and Forest Coaster	500	/	/	/	/	/	/
Total Cost	13,393						

Note: Table excludes VAT, professional fees, construction inflation, capital allowances, land remediation, risks, relief, grants, etc. For breakdown of costs please refer to the appendices.

14.0 Elephant House

14.2 Proposal

14.2.6 Project Specific Issues / Proposed Programme

This can be completed as a independent piece of construction.

Below we have provided timescales for each RIBA work stage for the proposed the Elephant House proposals.

RIBA Work Stages

Stage 0 - Strategic Definition

- Completed during development of funding document

Stage 1 - Preparation and Brief

- Completed during development of funding document

Stage 2 - Concept Design

- 4 weeks to develop proposals

Stage 3 - Developed Design

- 8 weeks for the production of drawings
- 13 weeks for statutory consent

Stage 4 - Technical Design

- 8 weeks to produce technical drawings
- 4 weeks for tender

Stage 5 - Construction

- 24 weeks in construction

Stage 6 - Handover and Close Out

- 4 weeks for fit out and interpretation

Total predicted timescales: **65 weeks**

Project Specific Issues

- Pre - application discussions** - Historic England, Twentieth Century Society, Natural England and the LPA to be held.
- Consent** - Scheduled Monument / Planning Consent / Listed Building
- Reports** - Concrete condition / Ecology / Structural Survey / M&E survey / Drainage Survey / Conservation Management plan / Building Fabric Condition Survey
- Other** - Demolition of existing, Site access.

Intentionally Left Blank



15.0 Tropical Bird House

(Former Parrot House)

15.0 Tropical Bird House

15.1 Existing

15.1.1 Historic Information

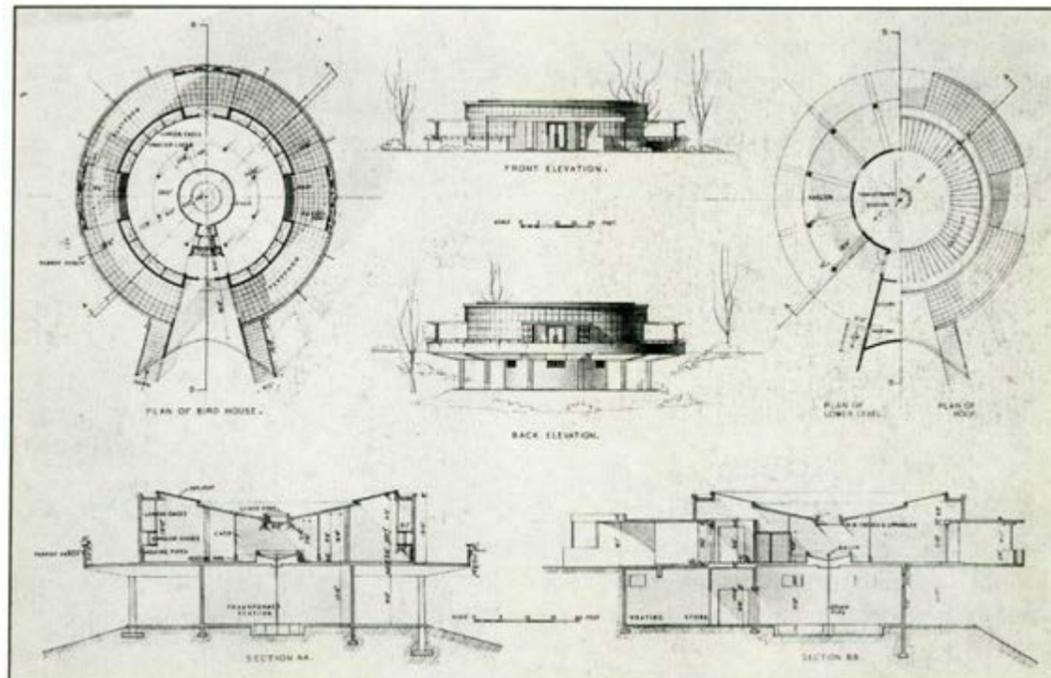
Original

The Tropical Bird House was sited in perhaps the most commanding position of all the Tecton buildings. Set east of the Castle on a steep, east-facing site, with views out over the wooded slopes to the north. It was built to house semi-tropical birds, such as parrots, and incorporated a heated indoor house and an external balcony, which allowed some of the birds to be displayed outside during summer. Unlike the animal houses closer to the Castle, the Tropical Bird House was in a less sensitive site, and this enabled the architects to create a bolder design without significant height restrictions. The two-storey building thus created was something in the manner of a belvedere, its drum form and hilltop location recalling the use of such towers in C18 English landscape design.

The steep site, with the ground falling away sharply to the east, served to link the two levels within the terraced grounds, in common with the other large animal houses designed by Tecton for the site. The upper level, which was the expected approach from the south, gave access into the tropical bird house and surrounding balcony which cantilevered out over the paddock below. This allowed not only a view of the bison in the enclosure, but also over a wide area of the zoo grounds. A flight of steps gave access to the area immediately below the house, where the cantilevered balcony doubled as a shelter for visitors in wet weather. The central drum beneath the main house provided a discreet location for an electricity transformer station.

The design of the building was impressive for its engineering and spatial qualities. The reinforced concrete roof, in the form of a partial inverted flat cone carried on plain columns, was structurally separate from the circular external wall, and the two were united only by the double-glazed roof light which bridged the gap in an unbroken circle. Historic photographs show the interior flooded with light. A circle of wire mesh drops down under the central roof cone creating a large aviary. Large and small, white-tiled, mesh covered enclosures lined the exterior wall of the entire structure from one side of the entrance to the other. The tropical bird house is no longer used for its original purpose. The paddock beneath now houses Asiatic lions. The building was put on the statutory list as Grade II*

Extract taken from <http://tectons.dudleyzoo.org.uk/collection/elephant-house/>



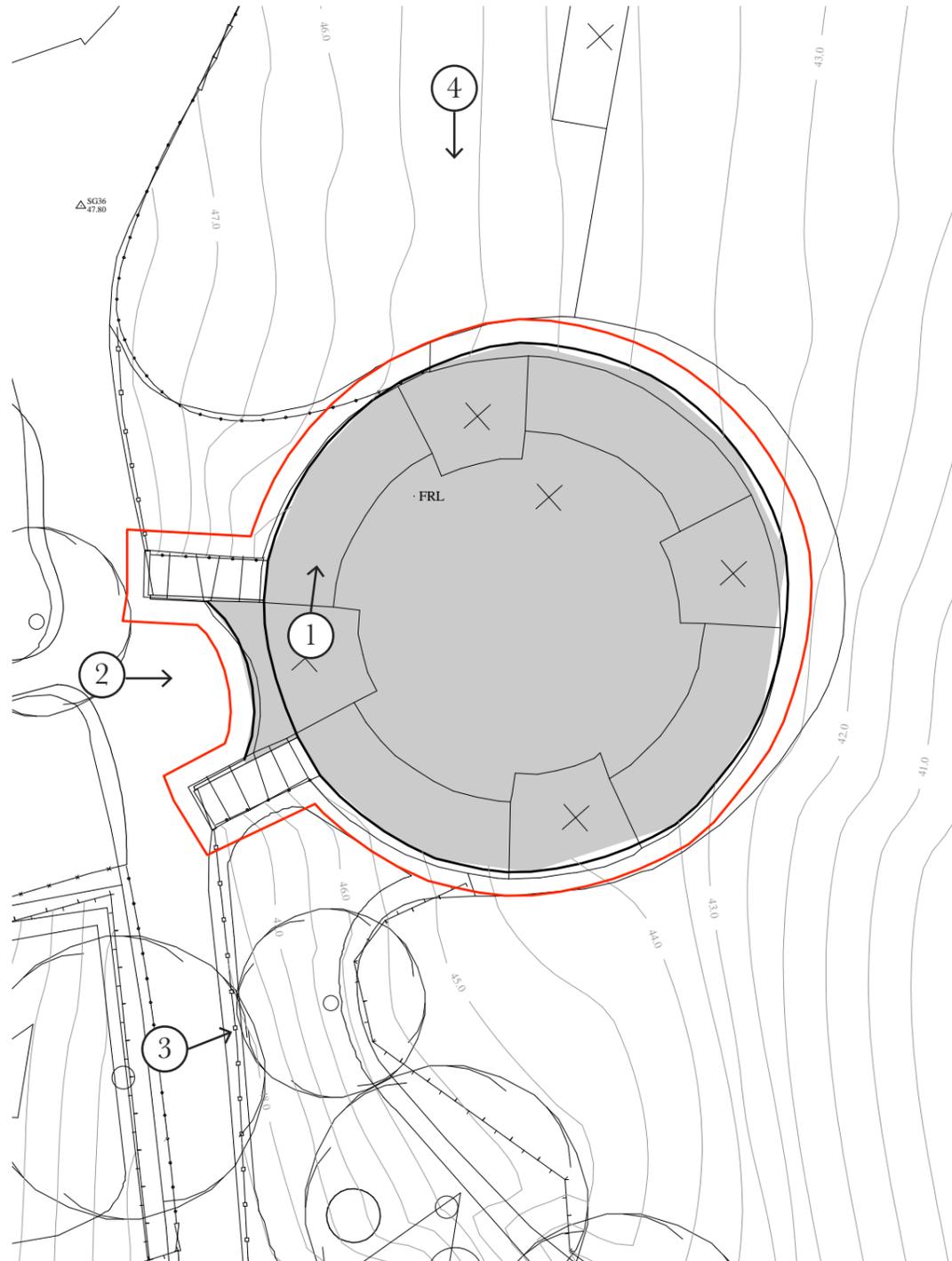
15.0 Tropical Bird House

15.1 Existing

15.1.2 Location & Condition

In the 1980s the Tropical Bird House was renovated by Alan Powell on behalf of DMBC. The restoration programme failed to provide a viable role for the indoor area and since being restored the building has had multiply unsuccessful uses, the building is now within the grounds of the lion enclosure and no longer open to the public.

The lower floor sits aside an external play and lunch space. The upper balcony is not open to the public due to its location within the lion enclosure and is restricted by glass balustrades illustrated in image 1.



15.0 Tropical Bird House

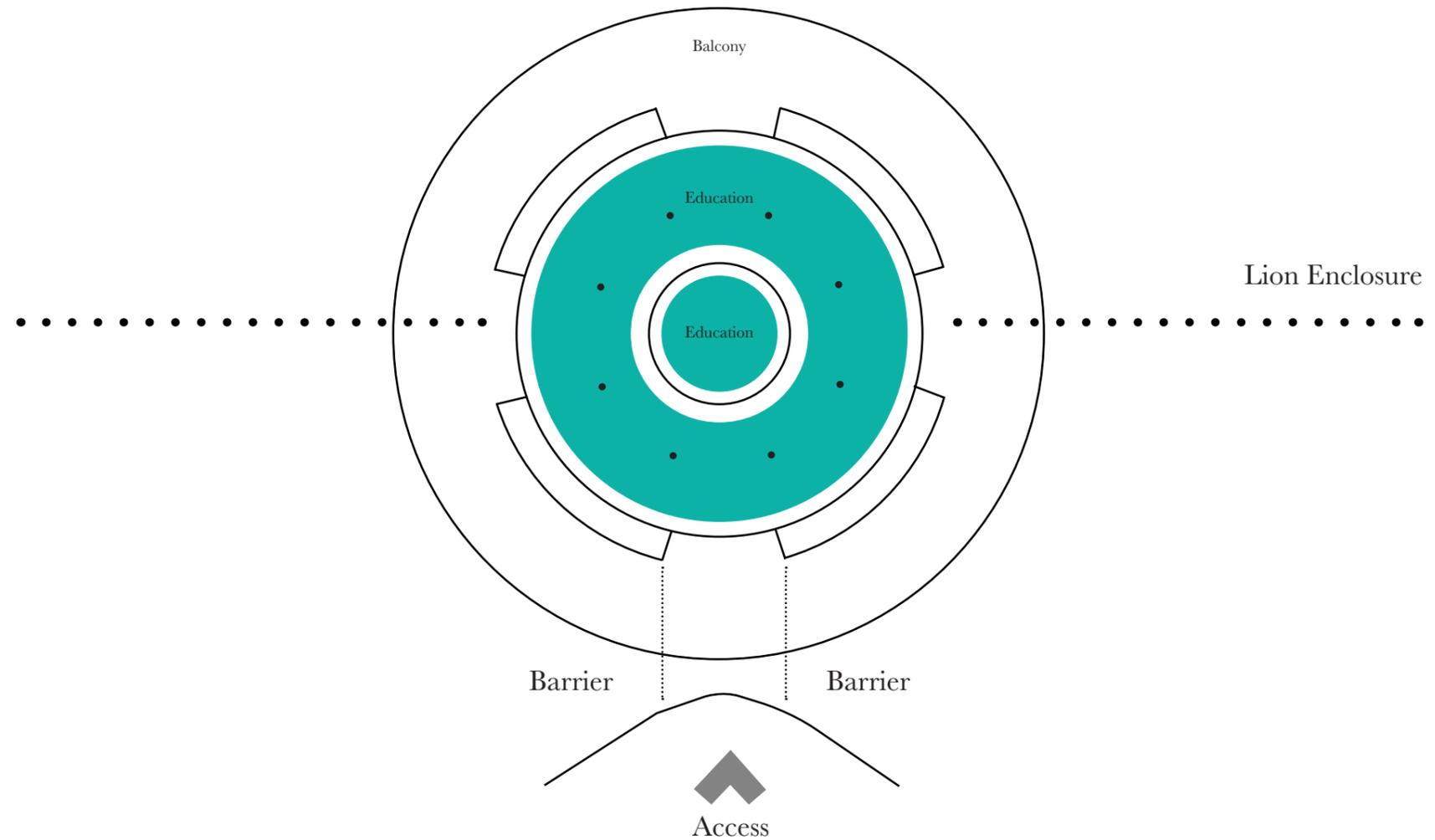
15.2 Proposal

15.2.1 Option 1

To allow the significance of this building to be fully revealed we feel an exploration through digital media benefits this building and this location.

The proposal aims to re-purpose the space providing an educational facility that uses digital media to educate the occupant on various subjects, such as Dudley Castle history, the original function of the Tropical Bird House or various natural animal habitats. The original central bird cage could be used as an immersive digital space or a seating area to watch the surrounding projections.

Due to the listed status of the building the options stated will be easily reversed if necessary and will have no adverse affect on the original integrity of the listed building.

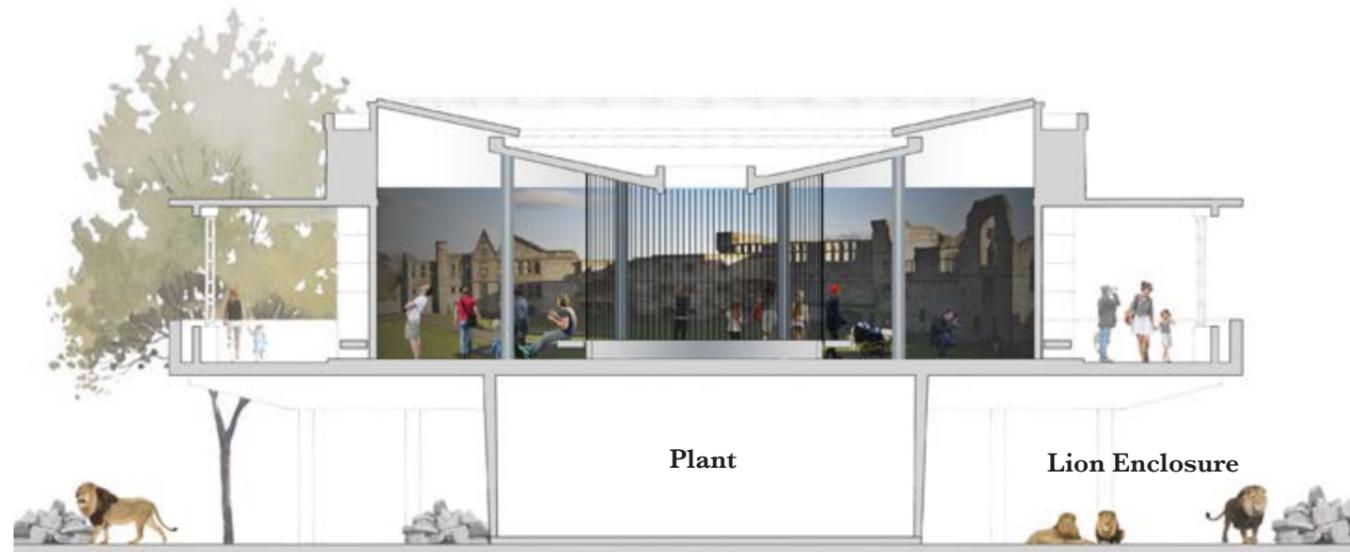


Option 1 Diagram

15.0 Tropical Bird House

15.2 Proposal

15.2.1 Option 1

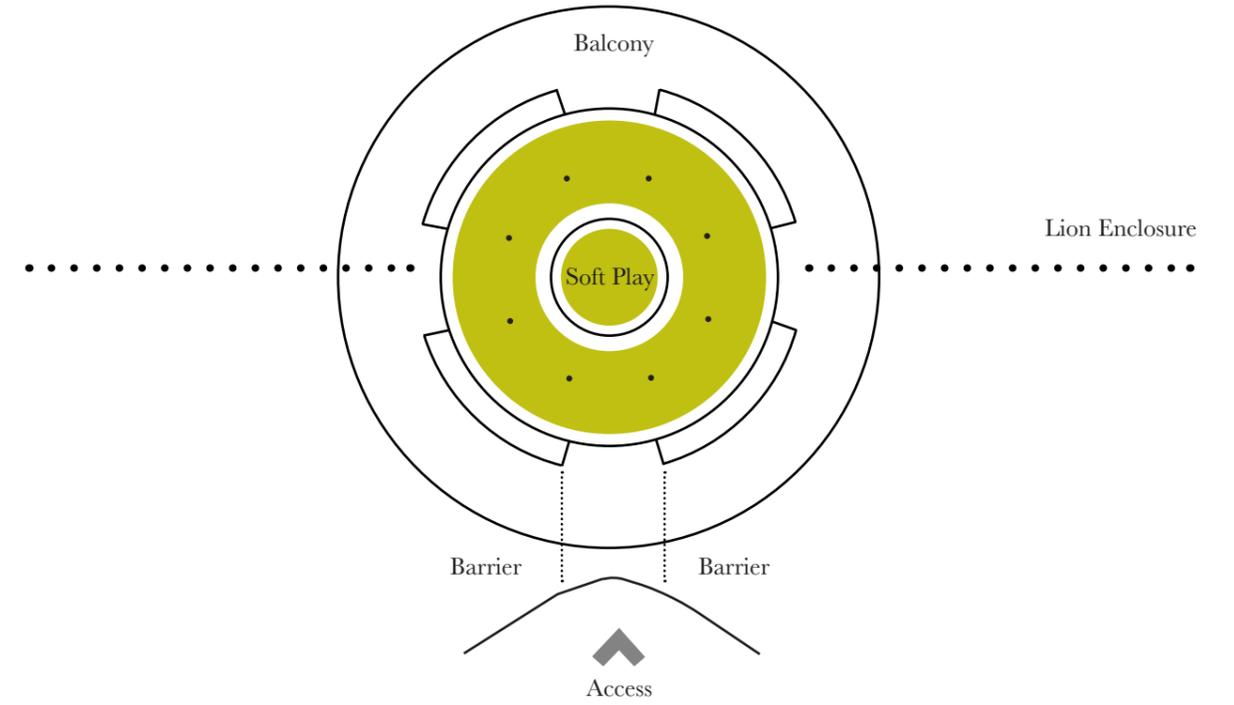


15.0 Tropical Bird House

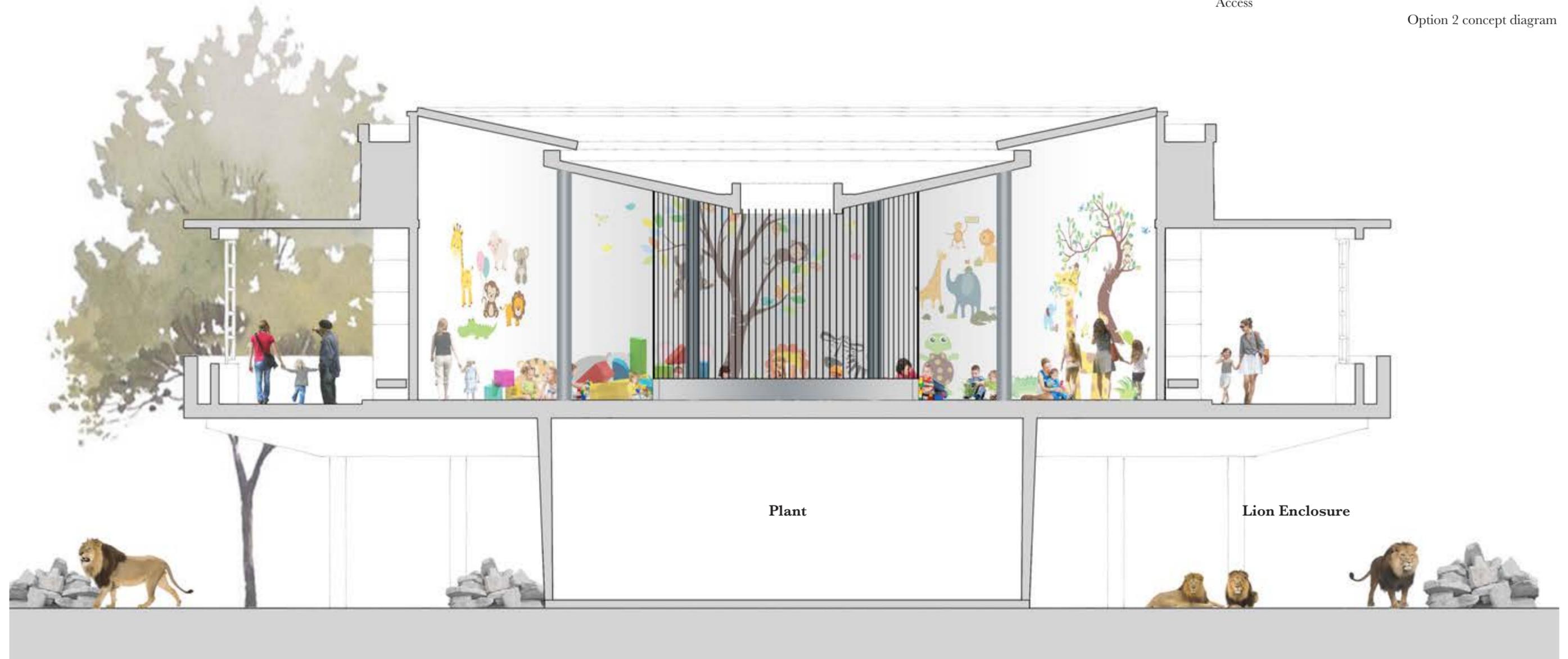
15.2 Proposal

15.2.2 Option 2

The second option is a soft play area for young children. On entering the space the occupant will be greeted with a main desk, cloak and shoe stores and seated areas, the remaining space will consist of indoor play equipment.



Option 2 concept diagram



15.0 Tropical Bird House

15.2 Proposal

15.2.3 Costs

BPN have proposed two options for the Tropical Bird House.

- An immersive digital interpretation space allowing the space to provide a educational/interpretative role within the Zoo
- A soft play area

The works to the tropical bird house include the repair of the Tecton structure and the fit out works for the proposals. Where possible reinstatement of original architectural features, reinstatement of the original Lubetkin colour scheme and undertake necessary concrete repairs.

The Tropical Bird House had extensive restoration works in the 1980s which have altered the original birdhouse

Each cost is divided by refurbishment works and new works. The budget costs are based on the drawn scheme and Stand Consulting Engineers photos and drawings. Please refer to the appendix C for the cost breakdown.

The overall project cost for Option 1:

£242,799.36 (Excluding VAT)

The overall project cost for Option 2:

£143,223.92 (Excluding VAT)

15.0 Tropical Bird House

15.2 Proposal

15.2.4 Funding

As with the Phase 1 Tectons HLF project, a strong focus on training and the use of apprenticeships would be appropriate. May be there could be an opportunity to work in a structured way with one of the architectural schools that were involved in the Phase 1 project as a primary activities partner?

Historic England was a key stakeholder in the Phase 1 project. Given its success from HE's perspective, it is possible that there could be a case for HE's financial assistance being made, although the agency might argue that its support should be prioritised towards the Castle project.

Although no Trust or Foundation funding was sought for the Phase 1 scheme, as other matched funding was already available, given the success of the previous scheme and the high national profile and accolades that the Tecton project has enjoyed, this may strengthen the case for seeking such support, but given completion for funding and competing projects within the overall vision, such as the Castle, this may be inappropriate.

DZG would be expected to contribute to the costs of the project as the long leasehold owner of the Tectons, as it did in the Phase 1 project.

Tropical Bird House. Option 1 – (digital bird house).The works are costed at c. £243k. The interpretation element may be ineligible.

	€000's	HLF	WMCA/BCLEP	HE	ERDF	T&F	Pvte
Tectons Phase 2	2,015	/	/	/	/	/	/
Giraffe House	1,030	/	/	/	/	/	/
Stores Cavern	756	/	/	/	/	/	/
Visitor and Education Facility	3,844	/	/	/	/	/	/
Round House/Lodge	78	/	/	/	/	/	/
Dudley Castle	3,558	/	/	/	/	/	/
Woodland Management	1,425	/	/	/	/	/	/
Woodland Platform	187	/	/	/	/	/	/
High Ropes and Forest Coaster	500	/	/	/	/	/	/
Total Cost	13,393						

Note: Table excludes VAT, professional fees, construction inflation, capital allowances, land remediation, risks, relief, grants, etc. For breakdown of costs please refer to the appendices.

15.0 Tropical Bird House

15.2 Proposal

15.2.5 Project Specific Issues / Proposed Programme

This can be completed as a independent piece of construction.

Below we have provided timescales for each RIBA work stage for the proposed the Tropical Bird House proposals.

RIBA Work Stages

Stage 0 - Strategic Definition

- Completed during development of funding document

Stage 1 - Preparation and Brief

- Completed during development of funding document

Stage 2 - Concept Design

- 4 weeks to develop proposals

Stage 3 - Developed Design

- 8 weeks for the production of drawings
- 13 weeks for statutory consent

Stage 4 - Technical Design

- 8 weeks to produce technical drawings
- 4 weeks for tender

Stage 5 - Construction

- 24 weeks in construction

Stage 6 - Handover and Close Out

- 4 weeks for fit out and interpretation

Total predicted timescales: **65 weeks**

Project Specific Issues

- **Pre - application discussions** - Historic England, Twentieth Century Society, Natural England and the LPA to be held.
- **Consent** - Scheduled Monument / Planning Consent / Listed Building
- **Reports** - Concrete condition / Ecology / Structural Survey / M&E survey / Drainage Survey / Conservation Management plan / Building Fabric Condition Survey
- **Other** - Site access / Retention of lower animal enclosure.

Intentionally Left Blank



16.0 Woodland

16.0 Woodland

16.1 Existing

16.1.1 Outline Management Plan

LUC have been appointed to deliver an Outline Management Plan for Castle Hill Woodland and Peggy's Meadow as part of a wider programme of improvements to Dudley Castle, Dudley Zoo and Castle Hill Woodland, all of which fall within the Castle Hill Conservation Area.

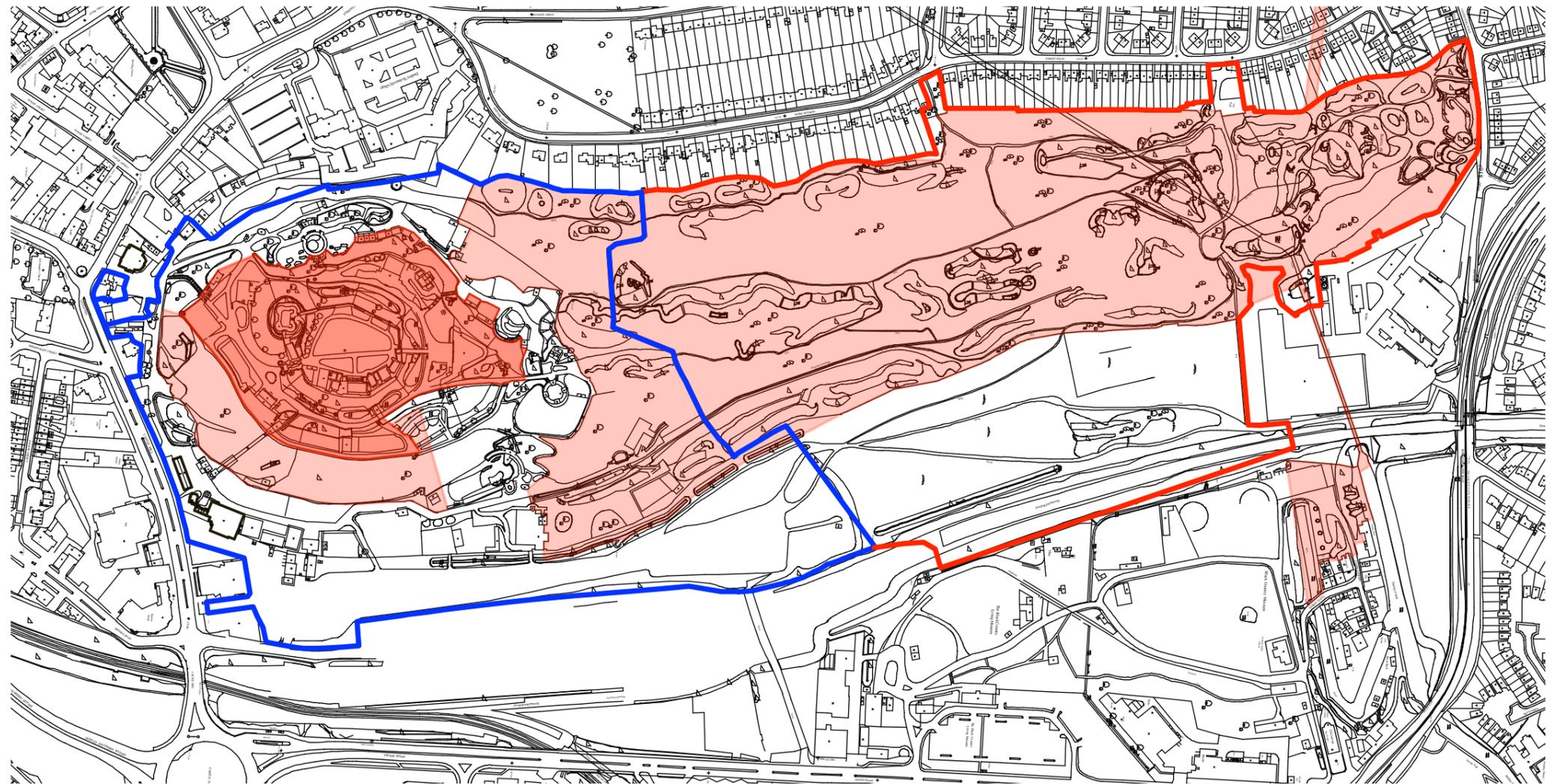
Castle Hill is currently divided between the Zoo, denoted in blue and the publicly accessible Castle Hill woodland, denoted in red. The woodland division has allowed DZG and DMBC to deliver their own proposals to the woodland within their demise. The improvements to Castle Hill Woodland will be delivered as part of a wider project, with its aims and objectives linked to the wider overall aims of Dudley Zoological Gardens emerging programme of improvements which is a standalone project coordinated and managed by DZG in partnership with DMBC. (In this next chapter the ownership of projects between DMBC and DZG has been clearly demarcated.)

The purpose of this Woodland Management Plan is to:

- Develop a strategy for the way in which Castle Hill Woodland is managed and maintained, to ensure an enjoyable experience for present and future users
- Assess the strengths, weaknesses, opportunities and threats relating to the woodland's infrastructure, site users and available resources
- Identify the current designations of Castle Hill Woodland and evaluate potential for Local Nature Reserve (LNR) and Site of Special Scientific Interest (SSI)
- Develop prioritised actions which will inform the project to conserve and enhance the woodland.

The Outline Management Plan aims to address the key issues regarding the sites management and maintenance whilst informing the next steps for delivering a site masterplan. Once adopted the outline plan will be continuously reviewed and updated. Following a review of resources and the development of the masterplan a more detailed management plan should be produced to incorporate any changes.

LUCs outline management plan has been attached to this document, see appendix B.



Outline of Castle Hill Woodland

KEY

-  Zoo Boundary
-  Woodland Boundary (Publicly Accessible)
-  Scheduled Ancient Monument - Castle
-  Scheduled Ancient Monuments - Limestone remains

16.0 Woodland

16.1 Existing

16.1.2 History

Castle Hill has been used throughout history for its topographical, geographical location and geological use and as such has been a catalyst for development and industry in the local area for over 1000 years. Castle Hill Woodland is an intrinsic asset of the tangible and intangible cultural heritage of the local area.

The hill stands next to one of the historic routes over the hills between the Severn Valley and the Midlands plateau. This is likely to have been an important route since at least the Roman times when it would have been used to link the forts at Greensforge and Wall as well as providing a link in the route from Mid Wales to the markets of the Midlands. These were important droving routes from at least the middle ages into the 19th century. This militarily and economically strategic position is likely to have influenced the choice of building a Castle at Dudley and the establishment of a town.

Castle Hill has been central to a number of ecological discoveries, including the development of the first true stratigraphic geological map in 1665. The discoveries found on Castle Hill enabled the classification of the Silurian Period of geological time in 1839 and provided material for 19th century geologist Sir Roderick Murchison's book 'The Silurian System'.

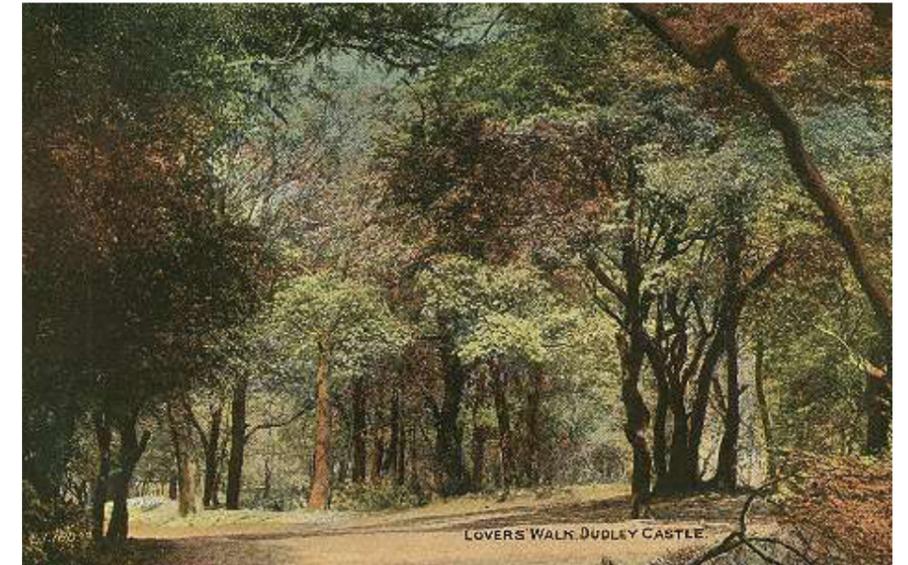
During the early 1900s the Castle and the Woodland were used as pleasure grounds with extensive paths around the base of the Castle including a lovers walk, it has been mentioned that lodges were located at the entrance points one to the north and one to south of the woodland with an alternative access closest to the Fellows Public House.

Castle Hill is intrinsically linked to the national and local development of Dudley and has played host to an abundance of nationally important historic events and people and as such it is a landscape of exceptional national importance.

Text taken from LUCs report.



Castle Mill Lodge, entrance to Dudley Castle and the Woodland, early 1900s



Lovers Walk through the established Castle Hill Woodland, postcard from early 1900s



Lovers Walk through the established Castle Hill Woodland, painted photograph taken in 1908



Lovers Walk, postcard from early 1900s

16.0 Woodland

16.1 Existing

16.1.3 Conservation & Condition

Conservation

The historic landscape of the hill and its reversion to a semi-natural state has resulted in the creation of high quality habitats for many species.

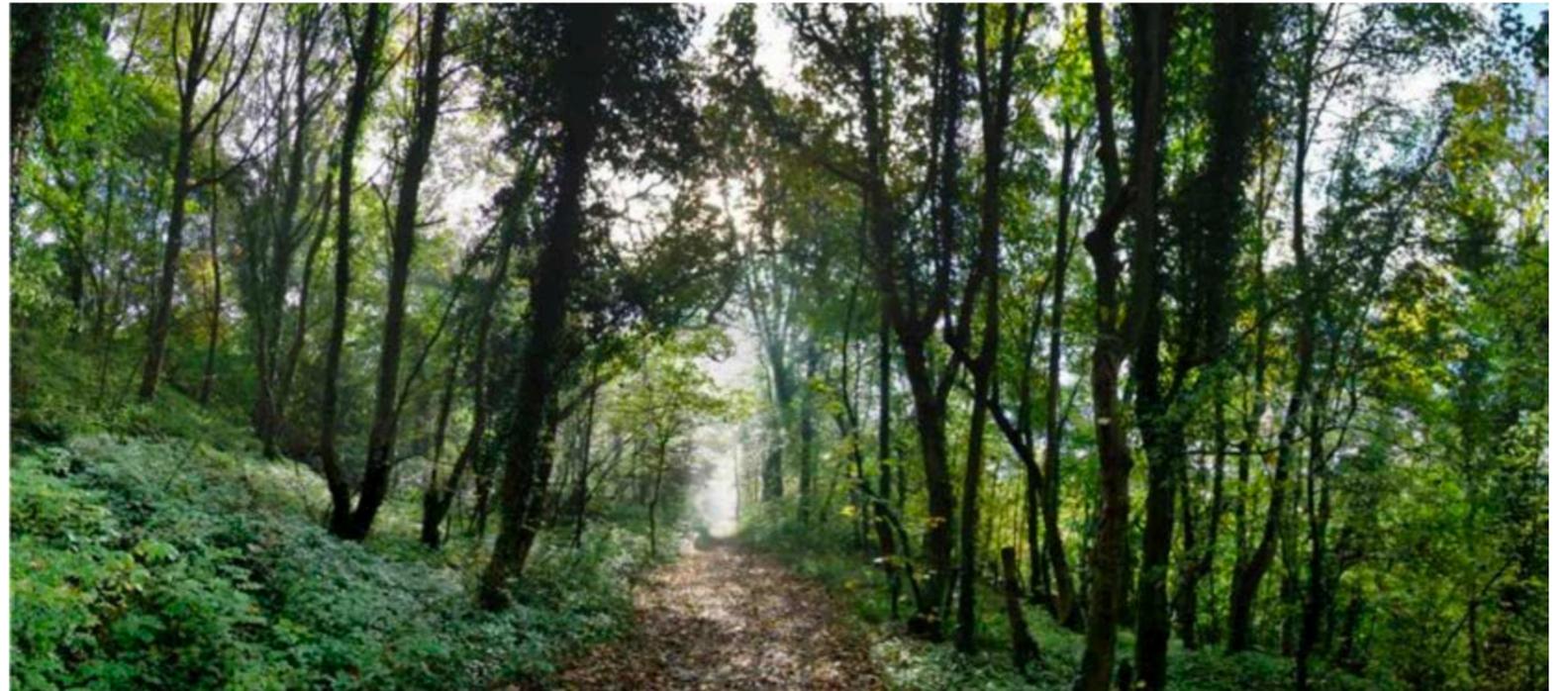
The hill is close to and connected to the important bat hibernaculum and swarming site at nearby Wren's Nest NNR, as well as the wider landscape via the extensive canal tunnels and green space links. Significant populations of bats have been noted in previous surveys of the remaining caverns beneath the site. The status and use of Castle Hill by bats is worthy of significant further study following the ongoing surveys that have been commissioned by DZG.

The woodland is one of the largest continuous areas of woodland in the Borough and Peggy's Meadow SINC (Site of Importance for Nature Conservation) site is valuable, but there has been some deterioration.

Current Condition

It has been identified that although Castle Hill is an important feature within the urban landscape and as a backdrop for a number of Dudley's key tourist attractions, the current levels of management of the Woodland has had an adverse impact on the value of the landscape and as such its aesthetic value is deteriorating. The landscape is intrinsically linked to the layout and development of Dudley but the landscapes current condition makes it difficult for visitors to understand its historical, geological, ecological and aesthetic value.

Its current communal value is limited by the adverse impact of a lack of resources to maintain the site appropriate to an important site such as Castle Hill. As a result, the area is victim to an abundance of anti-social behaviour which, currently creates a deterrent to visitors and the local community.



Path within Castle Hill Woodland - Image taken by LUC



Image of Peggy's Meadow - Image taken by LUC

16.0 Woodland

16.1 Existing

16.1.3 Conservation & Condition



Paths and exposed geology within Castle Hill Woodland - Image taken by LUC

Current Entrance points and wayfinding at Castle Hill Woodland

16.0 Woodland

16.2 Proposal

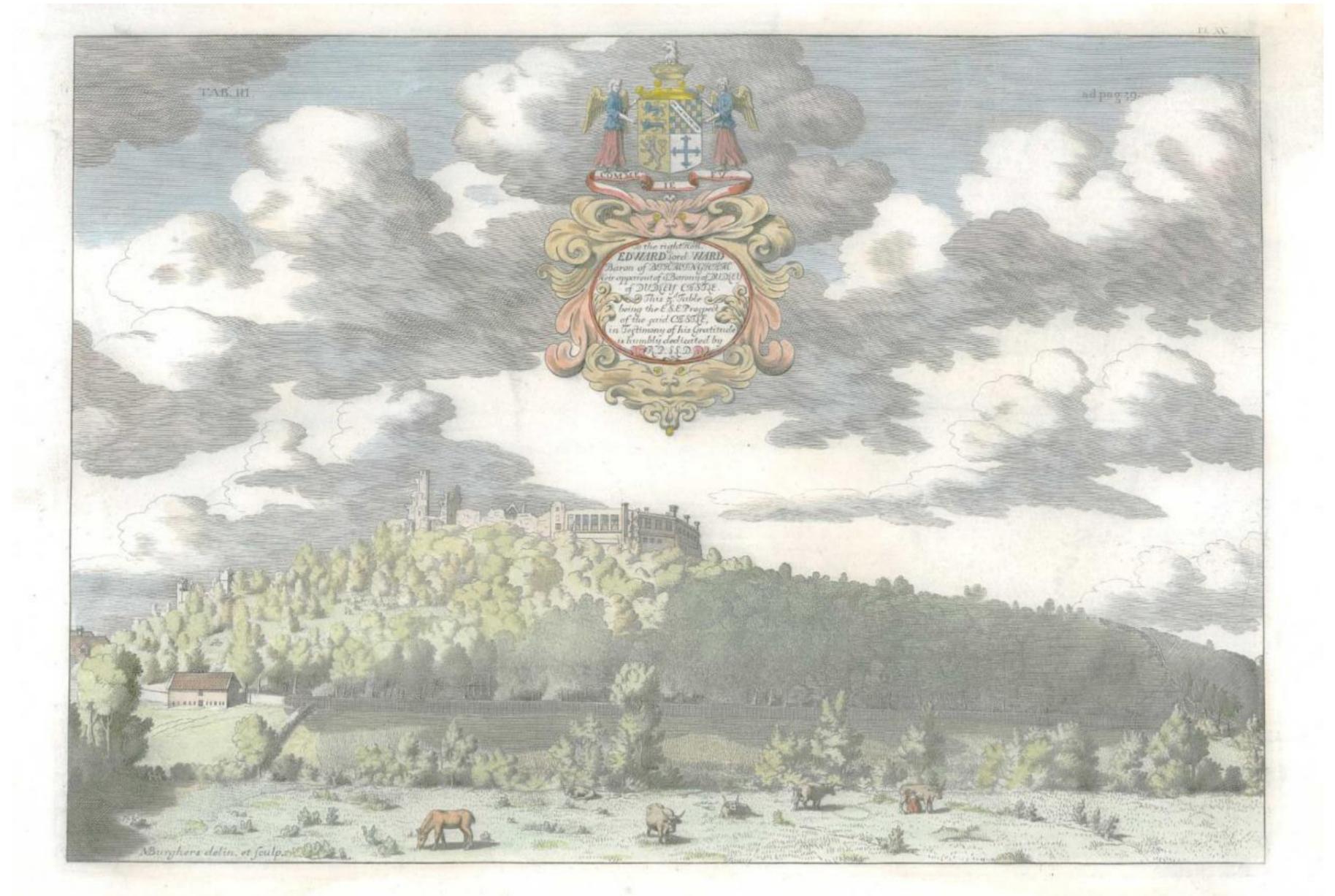
16.2.1 Introduction

The Castle Hill Woodland proposals aim to celebrate the rich ecological and historical value of the site whilst simultaneously looking forward and providing a sustainable landscape which contributes to Dudley's green infrastructure. The landscape will be attractive and provide equal access to nature creating a stimulating offer to all visitors be they adults or children. Practical and appropriate measures shall be taken to:

- Respect and enhance the geological and ecological quality of the site and the significant historic setting
- Enhance the enjoyment, access and understanding of the site for visitors
- Seek imaginative and innovative interventions
- Open up new opportunities for the Dudley GeoPark offer
- Seek opportunities to utilise the site to improve connectivity between the town centre and the Castle Hill visitor attractions, forthcoming improved transport network and major regeneration projects.

Castle Hill is an exceptional global landscape with a unique collective of heritage features and historic associations. As a consequence of this cluster, its conservation and use for education, recreation and visitor economy is truly unique. Castle Hill's adjacency to Wrens Nest NNR and featured as the home of the Black Country Global Geopark headquarters within the Dudley archives & museum enforce this strong association with the geological history of the area and features as a main geotourism node. The conservation and careful development of this area and these heritage features is essential to the success of the sustained visitor economy of the Black Country as a whole.

The aim of the woodland management plan together with this document is to assess the original condition of the woodland through surveys, meetings and documentary information. Providing an analysis of the woodland identifying factors which might be adversely affecting the significance and how the management could be enhanced without impacting features. Through this analysis we can develop a landscape vision for the woodlands and management approach through setting short, medium and long term management policies and actions.



Large antique print of Dudley Castle and the Woodland, 1801

16.0 Woodland

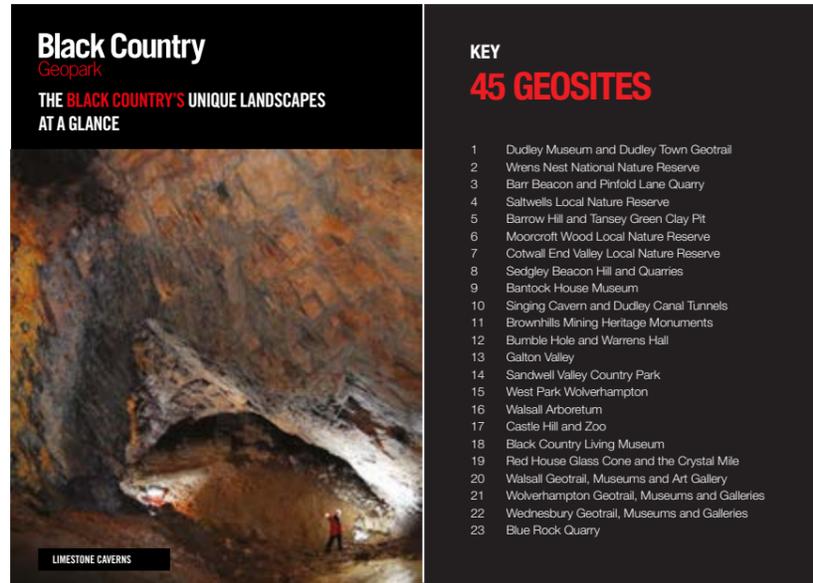
16.2 Proposal

16.2.2 GeoPark

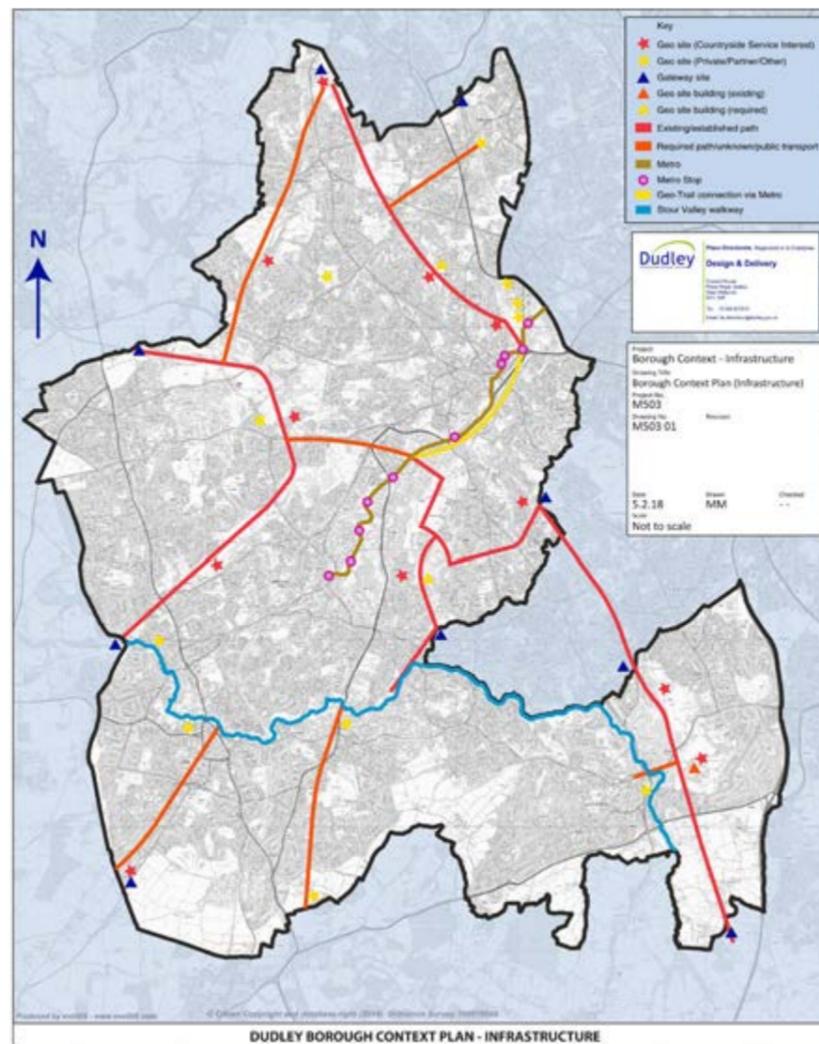
In the autumn of 2015, Dudley, Sandwell, Wolverhampton and Walsall councils jointly submitted an application to the Global Geopark Network to become England's third European and Global Geopark. A geopark is an area or territory with outstanding geological heritage and where there is considerable effort to conserve it and increase the public understanding and enjoyment of it. The outcome of the geopark application should be known in 2020.

There are forty five geosites across the four boroughs with half of them within the Dudley borough, Castle Hill being geosite no. 17. The council is currently developing a geotrail to link the main geosites within the borough via a footpath network (See Dudley Borough context plan), and is actively seeking external funding to realise this project.

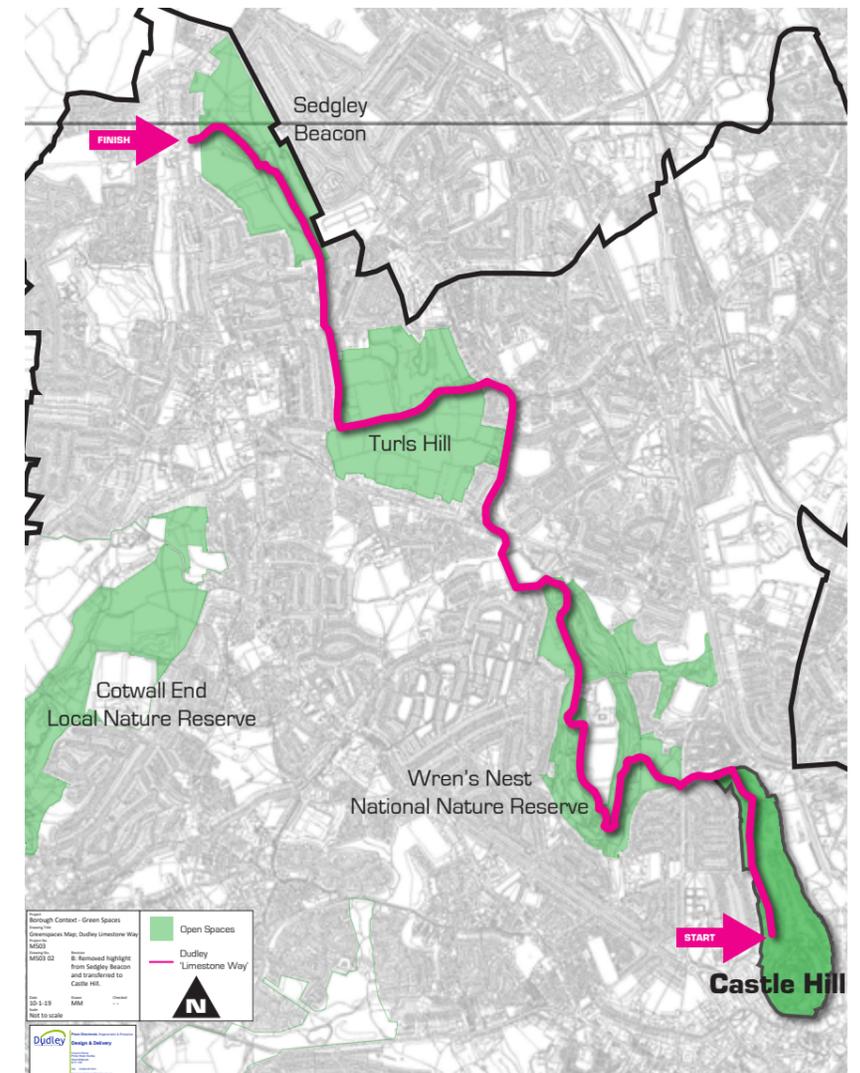
Castle Hill Woodland has been identified as a geosite because it is of evidential, historical and ecological importance, it is an essential landscape within the Limestone Way and Black Country Geopark.



Pages from the Black Country Geopark Pamphlet



DMBC diagram demonstrating the Geosite locations across the Black Country



DMBC diagram demonstrating the Limestone Way

16.0 Woodland

16.2 Proposal

16.2.3 Access

The main strategy for the woodland is to increase the accessibility and aid interpretation throughout the site. Creating a positive welcoming atmosphere within the woodland through both the physical and social access, bringing improvements to the landscape character and ecology.

Pedestrian Access

The woodland lacks a clearly defined access from Dudley Town Centre to Castle Hill. The creation of the recreational route has begun to link the attractions along the east side of Castle Hill, linking between DZG, the Black Country Living Museum and the Dudley Canal & Tunnel Trust, but the lack of access to the west of Castle Hill from Dudley town centre and the broken paths between these attractions equates to poor access and legible walking areas. The proposal seeks to provide a circular route around Castle Hill and provide a mechanism of mending the breaks in the areas of public access. Creating a circular route is yet to be fully determined but positive discussions are currently taking place between Dudley Council and the DZG which seek to achieve a mutually acceptable means of achieving this aspirational connectivity.

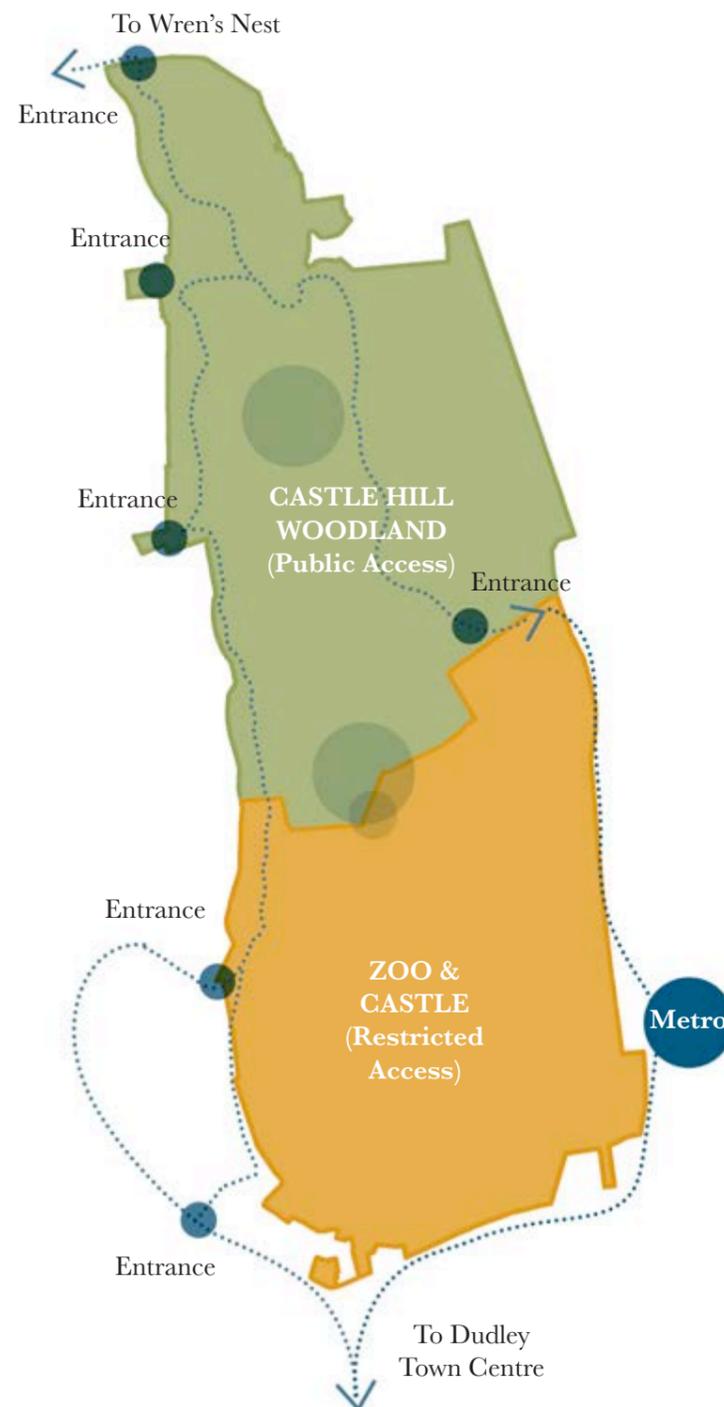
Cycle Access

The proposal seeks to develop a cycle route to link up with cycle paths developed in the Dudley Action Plan Strategy.

To support the cycle paths proposed cycle parking at the three main entrances is to be implemented. DZG currently supports the use of bicycles with a covered cycle parking shelter adjacent to the entrance. Cycle parking locations will need to ensure natural surveillance by users.

KEY

- Potential entrance
- Proposed access routes



Access points into the Castle Hill Woodland



DMBC diagram demonstrating the historic woodland paths and probable mineral rail routes

16.0 Woodland

16.2 Proposal

16.2.4 Interpretation

Entrance Points

The current access points are on the east and north side of the woodland lacking clear definition within the landscape, hidden away and recessed from the roadsides.

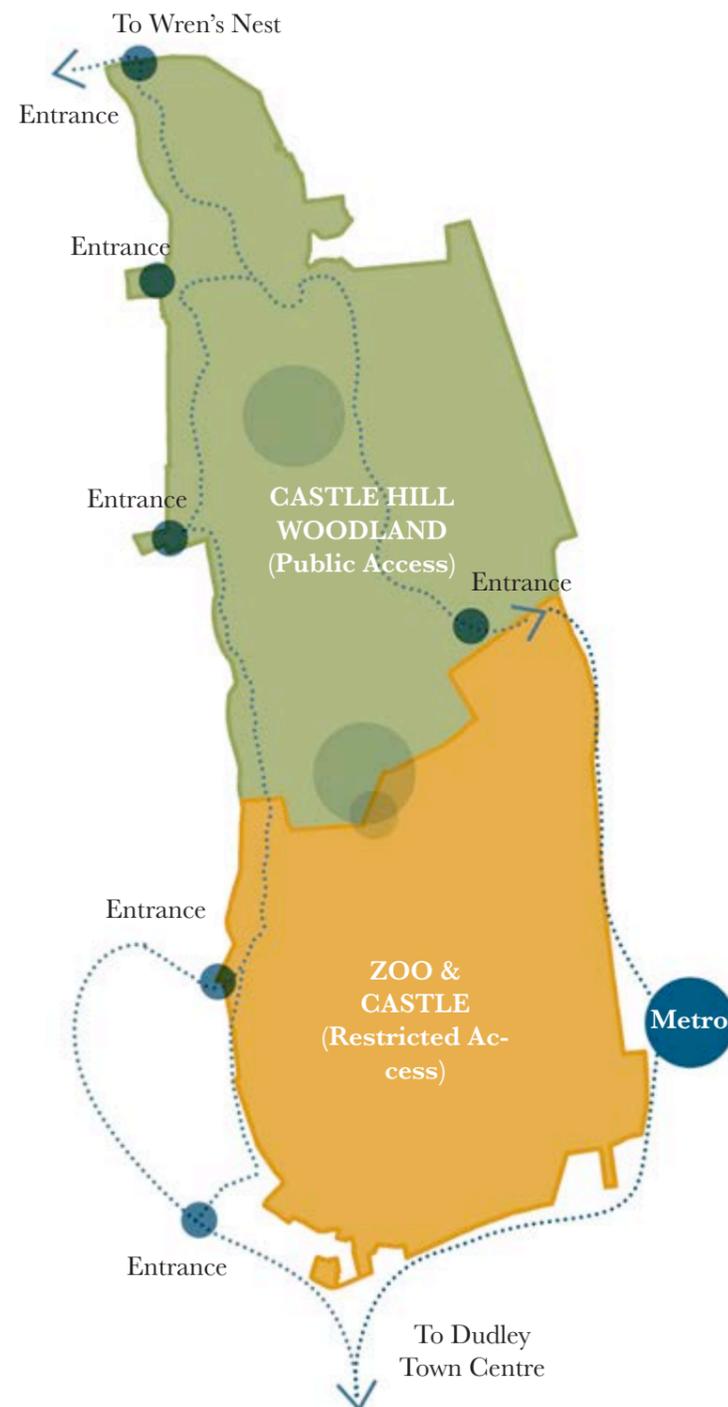
Due to the lack of control and protection to these entrances, excessive fly tipping has occurred within the woodland, the proposals seeks to prevent and discourage vehicular access through entrance enhancement, community engagement, informal interpretation, local identity of the site and possible use of public art for interest.

Interpretation

There is a lack of interpretation to guide visitors safely around the site and to the surrounding areas; this includes entrance signage, site maps and way marking within the site. This results in a lack of knowledge of the sites existence by non-Dudley visitors where there is no way marking from the town centre to direct visitors to Castle Hill. Interpretation has been proposed at the three access points into the woodland with wayfinding throughout. Following the success of the interpretation of Wren's Nest, it has been highlighted as a precedent for the scheme at Castle Hill, the signage at Wren's Nest is robust and hard wearing, a similar proposal will be required at Castle Hill.

KEY

- Potential entrance
- Proposed access routes



Access points into the Castle Hill Woodland



Current interpretation at Wren's Nest



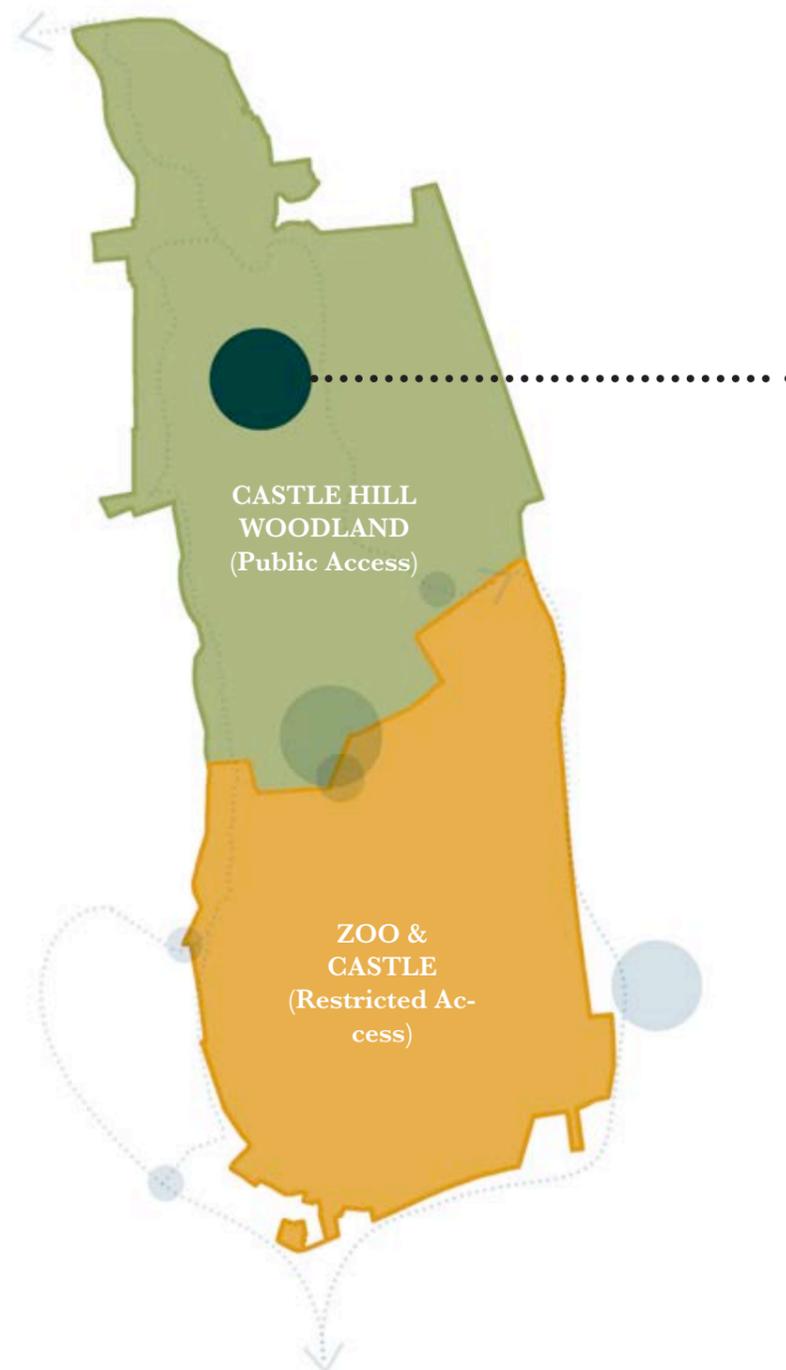
16.0 Woodland

16.2 Proposal

16.2.5 High Ropes & Forest Coaster

The high ropes area will allow a separate commercial entity to be based within the woodland providing a formal recreation within the site providing income for the woodland and ensuring the maintenance of the area.

Located within the Conwy Valley, Zip world have developed a low level roller coaster that meanders through the forest floor. One kilometre of gravity driven twists and turns have been installed, as this is a temporary installation this can be easily reversed and have little effect on the woodland environment lending itself to this environment. The historic mineral railways within the forest could provide the blueprint for the proposed forest coaster.



Location of high ropes area within Castle Hill Woodland

Go Ape! & Zip World



Forest Coaster



16.0 Woodland

16.2 Proposal

16.2.6 Platform

The platform will be located within DZG demise, hanging over Big Ben Cavern, the largest cavern within Castle Hill Woodland. The precedents on this page envisage the type of platform proposed. The proposal seeks to provide a platform for viewing the cavern along with interpretation, woodland management will aid lines of sight into Castle Hill Woodland and clearly define the cavern below.

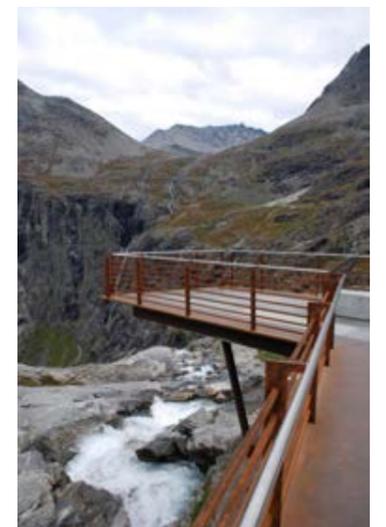
Throughout the Zoo experience visitors will be informed of the geological, ecological and historic nature of Castle Hill, at Stores Cavern, the Giraffe House and the here at the edge of the woodland. The platform will enhance the visual and interpretative links with Dudley Castle and the Zoo.

This programme of works will need to be prepared in line within the management of the woodland to ensure that vistas are opened up to maximise the impact of the cavern geological history.



Proposed location of platform within Castle Hill Woodland

Trollstigen Visitor Centre
Reiulf Ramstad Architects
Norway
2012



16.0 Woodland

16.2 Proposal

16.2.7 Management

LUCs Proposals

LUC have proposed an outline strategy for the management of the woodland, the diagram displays the enhancements to the woodland, the list below summarises these proposals:

- Improve visual links with surrounding landscape
- Enhance ecology across the site
- Increase the sense of safety
- Improve understanding of geological importance
- Provide safe and accessible cycle parking
- Reduce litter and increase sense of ownership
- Enhance footways

The immediate, short, mid and long term proposals are summarised on the opposite page but for the full report please refer to appendix B.

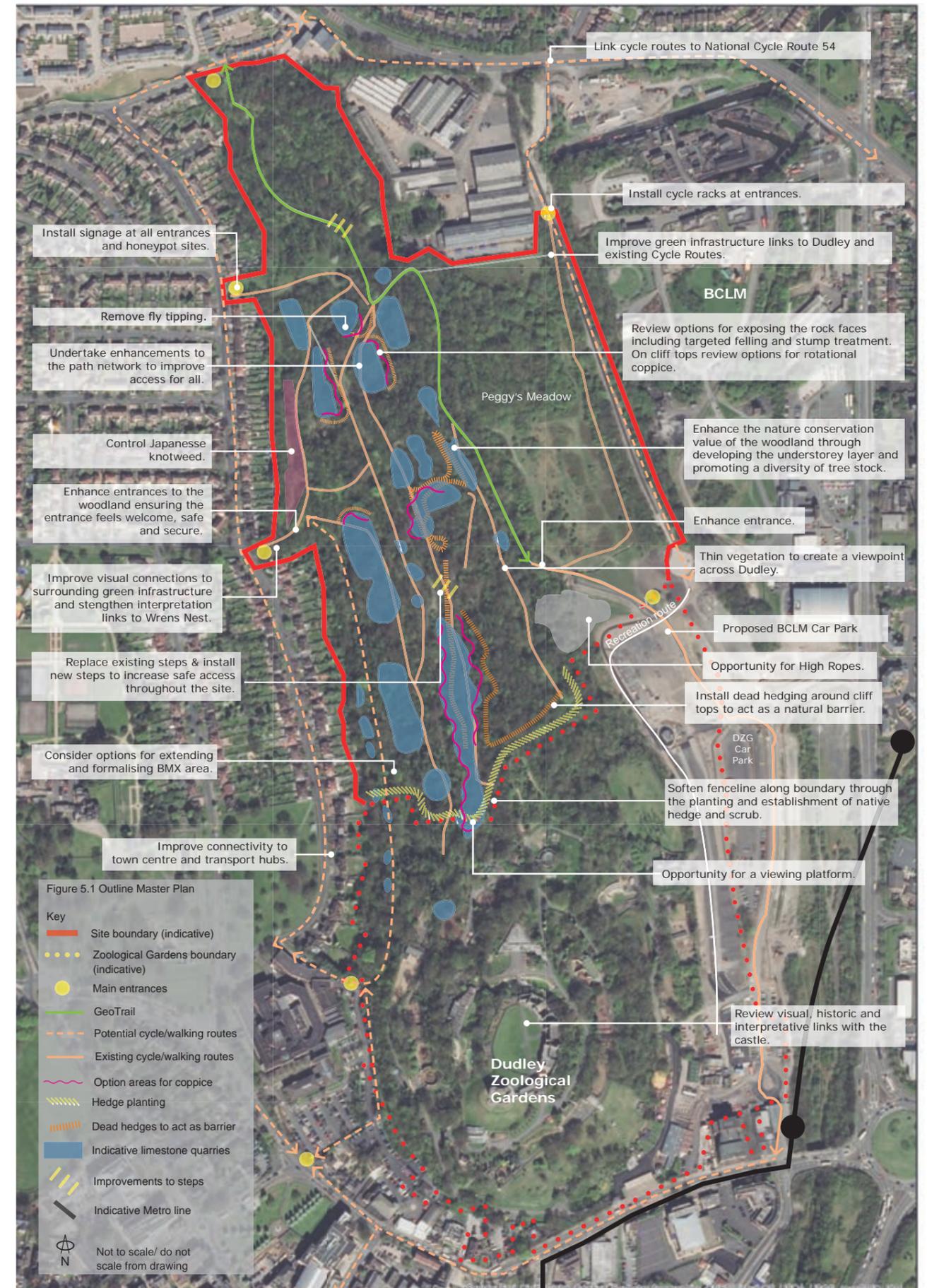


Diagram taken from LUCs Outline Management Plan

16.0 Woodland

16.2 Proposal

16.2.7 Management

IMMEDIATE

Commission an updated Japanese knotweed survey and management plan to inform the future managements recommendations

Consult with the local wildlife trust and Natural England prior to any works.

Commission a review of all bat activity and roost surveys to understand presence of species on site. The review should be carried out by a suitably qualified ecologist to assess validity of data and to provide recommendations for further survey work. The results of the survey work should inform proposals for the woodland and ensure the necessary licenses are secured prior to commencing work.

Commission an update of the tree hazard survey for the woodland to inform future management recommendations.

Remove litter and fly tipping from high profile areas.

Ensure all permissions are sought prior to the commencement of all works.

Undertake a Health and Safety based risk assessment of the woodland.

SHORT TERM

Work to reveal views out towards the surrounding landscape, work to sensitively remove branches to open up views.

Ensure surfaces are stable, level and obstruction free.

Develop a design strategy for interpretation, site furniture and promotional material, ensuring the interpretation echoes the significance of the site and sense of place.

Support and implement localised enhancements to entrances, site furniture and surfaces. Deliver three entrance interpretation panels to ensure the entrances to the site are more visible, welcoming and accessible and discourage unauthorised vehicle use.

Carry out more detailed ecological surveys to identify features of significance and areas of enhancement. Update management plan following the results of survey.

Review and update management plan as needed.

Ensure those entrusted with the management of the site (Wrens Nest staff and volunteers) are provided with training in public liaison, first aid, security measures and career development. Make sure they have a recognised uniform and sign written vehicles.

Carry out vegetation management in accordance with the maintenance schedule and crown lift trees as appropriate. Ensure that good sightlines are maintained to provide good views of traffic and allow public surveillance.

Enforcement of byelaws and dogs (fouling of land) act. Educate dog owners through interpretation by posting of byelaws and other guidance in main information boards.

Develop rotational clearance of scrub to reveal the geological formations in the rock face.

Undertake all immediate tree works following the Tree Risk assessment. Ensure to consult with a qualified ecologist and Natural England prior to the removal of any tree with potential bat roosts.

Ensure DZG continue to be consulted throughout the master plan development. Develop bi-annual stakeholder meetings to promote collaborative working following the masterplanning process.

MEDIUM TERM

Install way markers and site interpretation to include site maps. Develop a digital platform to link with the DMBC webpages, the Geopark and Limestone Way. Ensure the design of all material is informed by the design strategy.

Implement cycle parking at the three main entrances. Ensure cycle parking is located to encourage natural surveillance by users.

Develop a cycle route to link up with cycle paths developed in the Dudley Action Plan Strategy. Consider partnership with Transport for West Midlands to create a network which is free from barriers (e.g. steps) and seek opportunities to support bike sharing schemes. Where possible cycle routes should link up towards National Cycle Route 54 (& 81).

Develop a strategy for improving access through the site and opening up alternative routes where applicable.

Develop a tree strategy to increase interpretation of the heritage and geodiversity within the site. Ensure the strategy is informed by the tree hazard survey and ecology survey.

Place litter and recycling bins at the three entrances to the site. Use periodic interpretation on site to encourage a 'take your litter home' policy.

Respond to acts of vandalism/graffiti.

Improve and enhance the path links to Dudley town centre, the Black Country Living Museum and the Canal Trust.

Provide wheelchair accessible picnic benches where appropriate. Provide further seating at identified focal points within the woodland.

Repair or, where appropriate, replace existing path surfaces using self-binding gravel (Breedon).

Consider creating a series of circulation routes offering the opportunity for visitors of all abilities to experience points of interest within the woods. Routes through the area could be attributed health walks/cycling, recreation or have a designated functional status. Consider opportunities to promote new paths within the emerging Local Cycling & Walking Infrastructure Plan.

Develop a programme of activities to engage the public and school groups. Promote the creation of a Friends Group through the links with the Canal Trust, the Zoo, the Black Country Living Museum and schools activities. Work with the Friends Group and other voluntary organisations to secure further external funding to fund further protects within the woodland and support the long term sustainability of the site.

LONG TERM

Conduct a visitor survey to assess the needs of the young demographic to encourage greater use and sense of place of the site.

Conduct a feasibility study on the implementation of youth play facilities up to the age of 25 and an assessment of an appropriate location.

Conduct a feasibility study to assess the viability of providing a viewing platform overlooking geological formations (Big Ben) from the zoo.

Develop a feasibility study to assess appropriateness of developing a fitness trail, informal BMX trail and greater visual and interpretative links with the local nature trails to support activities which are already established in the area.

Develop a programme of evening bat walks, local park runs and public art installations.

Finalise landscape strategy and master plan following feasibility studies and surveys.

Commission 10 year Management Plan following the guidance produced by HLF and CABE.

Ensure management plan is reviewed and updated following any changes to the landscape strategy.

Explore commercial opportunities in the form of woodland high ropes and forest coaster to generate income to support the sustainability of the woodland though maintenance and further development opportunities.

16.0 Woodland

16.2 Proposal

16.2.8 Costs

DMBC project cost:

The costs for the woodland management have been provided in a separate cost plan, providing a definitive separation between the Zoo, Castle and Woodland costs. The costs include the short, mid and long term costs as discussed in the management report produced by LUC. The costs have been split further between DMBC demise, DZG demise and additional costs for external company ventures as indicated below:

£1,424,903.92 (Excluding VAT)

Please refer to Appendix E for a detailed breakdown

DZG project cost:

The platform will be within DZG's demise and therefore has been calculated within the Castle Hill Vision cost plan equating to:

£187,171.88 (Excluding VAT)

Please refer to Appendix C for a detailed breakdown

Additional:

An indicative cost the high ropes area has been added to the woodland cost plan equating to:

£500,000.00 (Excluding VAT)

This figure could vary based on the configuration and complexity of the proposal. Please refer to Appendix E for a detailed breakdown.

16.0 Woodland

16.2 Proposal

16.2.9 Funding

The woodland management plan forms part of a much wider capital regeneration project for which the council is seeking external funding. An application will therefore be made to the European Regional Development Fund (ERDF) under Priority Axis 6d 'Protecting and restoring biodiversity and soil and promoting ecosystem services, including through Natura 2000, and green infrastructure.'. As such, the priorities of the ERDF have been considered within the vision for Castle Hill Woodland and actions within the Woodland Management Plan will deliver, or be supportive of, required ERDF outputs. Namely to ensure Castle Hill Woodland acts as a facilitator to the Castle Hill regeneration, encouraging greater green space connectivity, promoting access to open space, enabling a healthy balanced lifestyle for the local community and creating a sustainable environment which conserves the landscape for future generations.

Taken from LUCS text

There are three elements to this project. The largest, Woodland Management, is costed at c. £1.425m. A second component, the Woodland Platform, is costed at c. £187k. Finally, the High Ropes and Forest Coaster Project is costed at c. £500k. We assume that the High Ropes project would be progressed if it attracted a private (commercial) investor and we have therefore not commented on this further as our focus is on non-commercial funding. Key to unlocking the other elements of the woodland project is its relationship and engagement with the disadvantaged/excluded community and area of poor housing and amenity that lies adjacent to the Woodland. Linkage with the Zoo site, with the Black Country Living Museum and with the Wrens Nest NNR are also important, as is progress with Geopark application. Taking this holistic view should also strengthen the case that can be made for WMCA/BCLEP funding.

As noted in the Funding Appendix, an ERDF application is being submitted in the next few months at the c. £200k level. We understand that the English Woodland Grant Scheme, which was highlighted in the project brief, is closed to new applications. Natural England support would be important as it could help to signpost the project for some Trusts and Foundation funding.

Under the previous HLF programme, this could have been an eligible project for the Landscape Partnership programme. It may be a contender for the new open programme especially if its community, wellbeing and volunteering focus and working with a range of woodland, ecology, environmental and geology partners is to the fore.

	£000's	HLF	WMCA/BCLEP	HE	ERDF	T&F	Pvte
Tectons Phase 2	2,015	/		/		/	
Giraffe House	1,030		/			/	
Stores Cavern	756	/	/			/	
Visitor and Education Facility	3,844		/			/	
Round House/Lodge	78	/	/			/	
Dudley Castle	3,558	/	/	/		/	
Woodland Management	1,425	/	/		/	/	
Woodland Platform	187	/	/		/	/	
High Ropes and Forest Coaster	500						/
Total Cost	13,393						

Note: Table excludes VAT, professional fees, construction inflation, capital allowances, land remediation, risks, relief, grants, etc. For breakdown of costs please refer to the appendices.

16.0 Woodland

16.2 Proposal

16.2.10 Project Specific Issues / Proposed Programme

This can be completed as a independent piece of construction.

Below we have provided timescales for each RIBA work stage for the proposed the Woodland proposals.

RIBA Work Stages

Stage 0 - Strategic Definition

- Completed during development of funding document

Stage 1 - Preparation and Brief

- Completed during development of funding document

Stage 2 - Concept Design

- 8 weeks (depending on timings for survey work) this includes:
- Health and safety risk assessment
- Updated Japanese knotweed survey and management plan
- Phase 1 habitat survey
- Tree condition survey & tree strategy
- Commission a 10 year management plan

Stage 3 - Developed Design

- Allowance of 13 weeks for full planning and Listed planning consent
- 16 weeks

Stage 4 - Technical Design

- 9 weeks

Stage 5 - Construction

- 16 weeks

Stage 6 - Handover and Close Out

- 4 weeks

Total predicted timescales: **66 weeks**

Potential issues to consider include:

- Timing of ecological surveys
- Securing licenses for ecological works
- Timing of tree removal work and tree planting (out of nesting season and within bare root planting season)
- Site access and location of contractor's compound
- Reliance on certainty and design of wider Dudley strategic projects (e.g. connections to Metro line and Green Link)
- Procurement of wider Castle Hill package of works and the potential impact on programme
- Consents for Scheduled Monument for Line Workings In Dudley
- Works which can be delivered separately include fly tipping removal, graffiti removal etc

Intentionally Left Blank



17.0 South Gateway

17.0 South Gateway

17.1 Existing

17.1.1 Introduction

The South Gateway was the original access to the Victorian paths that encircled the base of the Castle and Castle Hill. The paths were accessed via a stone gateway off The Broadway as shown in the adjacent images.



Two images of the historic entrance to the gardens, taken in the 1930s

17.0 South Gateway

17.1 Existing

17.1.2 Current Condition

The current gateway sits within the car park of the Fellows Public House. Both the original houses still survive as shown in the historic photos forming part of the original entrance into the castle grounds.

The security gates to the boundary of the zoological gardens are not used regularly. The route behind the gates is used for the land train and access to the animal hospital very occasionally. The land immediately outside the gates belongs to the Fellows and is in constant operation.



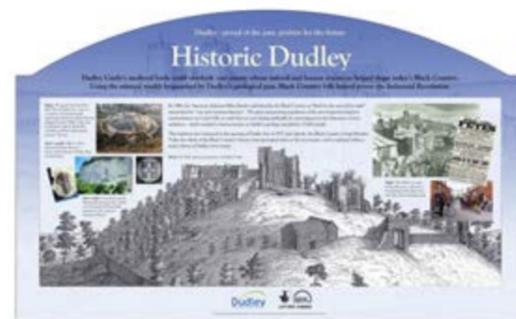
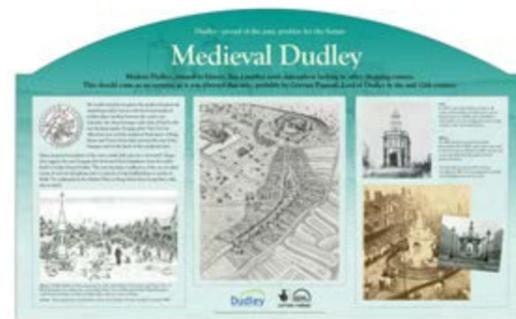
Images left to right: View from within DZG grounds of the current south gateway, view towards Dudley town centre within fellows Car Park and view within fellows car park of the current gates.

17.1.3 Precedents

The ambition is to provide both interpretation and new gates that provide an iconic art piece that provides a better backdrop to the park boundary and a key vista from Dudley town centre towards the Zoo and Castle beyond.

The proposal seeks to provide interpretation similar to the current interpretation boards throughout Dudley.

The gate design could be influenced by various factors, the Zoo, the Tecton structures, the original Victorian paths or the woodland beyond. The images shown are insights into the proposals that could be achieved ensuring that the gates are fully functional for ensuring animals can not penetrate this boundary.



Interpretation boards



Gate precedents



17.0 South Gateway

17.2 Proposal

The proposals offer opportunities to achieve the Council's long held aspirations to create connectivity between the Zoo & Castle and Dudley town centre. Issues of third party land ownerships and the acceptable means of managing visitor movement in/out of the DZG secure boundaries are matters to be fully addressed before this can be realised. The proposal seeks to provide a visually attractive gate and provide an interpretation panel within the Zoo to promote what lies beyond the gates within the town centre.



Intentionally Left Blank



Intentionally Left Blank



18.0 Conclusions

18.0 Conclusions

18.1 Project Conclusion

In 2015, DZG in partnership with Dudley Council delivered major infrastructure works and enhancements to heritage buildings within the Zoo. The Castle Hill Vision Phase Two seeks to build on the success of this work by progressing DZG's long term strategy and masterplan and by progressing the vision of Dudley Council as is set out in its adopted Dudley Area Action Plan (AAP) and Castle Hill Conservation Area Character Appraisal. Castle Hill Vision Phase Two proposes development of exemplar projects which will in turn support:

- increased visitor numbers and participation by a wider demographic:-
- enhance the potential for training and education; and
- improve visitor and borough residents awareness of the history and significance of the Castle Hill Conservation Area, with strong emphasis on the Castle and the listed buildings within the DZG site.

The report also covers the Conservation Area beyond the boundary of the DZG by the development of an Outline Management Plan for the publicly accessible woodland on Castle Hill. The management plan sets out the long term objectives to conserve and enhance the woodland as an important natural resource within the heart of the urban environment and it explores sustainable and sympathetic ways in which to maintain and enhance the significance of such a rich landscape with huge geological, archaeological, ecological, and recreational potential.

The outcome of the Castle Hill Vision was to establish RIBA Stage 1 Design Proposals with costs, defined actions and possibilities for funding, which could easily be developed into a programme of deliverable projects, these include:

- The Castle
- Visitor, Research & Education Facility
- Stores Cavern Mine
- The Lodge

- Giraffe House
- Queen Mary
- Discovery Centre
- The Elephant House
- Tropical Bird House
- Woodland
- South Gateway

It became clear at an early stage that there was an opportunity to capture a wider theme for the Castle Hill Vision which would go beyond the immediate site and allow the brief to incorporate the views of a range of key stakeholders.

It is also important that the projects defined in this document are viewed alongside other developments being brought forward not only by DZG, with its development strategy for the Castle and Zoo, and Dudley Council's townscape regeneration and infrastructure enhancements, including the emerging Geopark, but also by other developers, institutions and attractions within the immediate surrounds of Castle Hill.

This document examines the connections and opportunities for inclusion within the local area and sets out the importance of Castle Hill as an icon within these proposals.

As such, the projects defined offer a wide variety of uses and an opportunity to test the concept of a Castle Hill Vision and how the attractions and activities can be set against this framework. Seemingly unconnected projects are therefore seen to be interconnected when viewed as safeguarding the heritage of Castle Hill, with the vision setting out key parameters for further projects to be tested against.

The conclusion of the document therefore lies in the importance of Castle Hill as a heritage asset with the vision outlining why this is important historically and

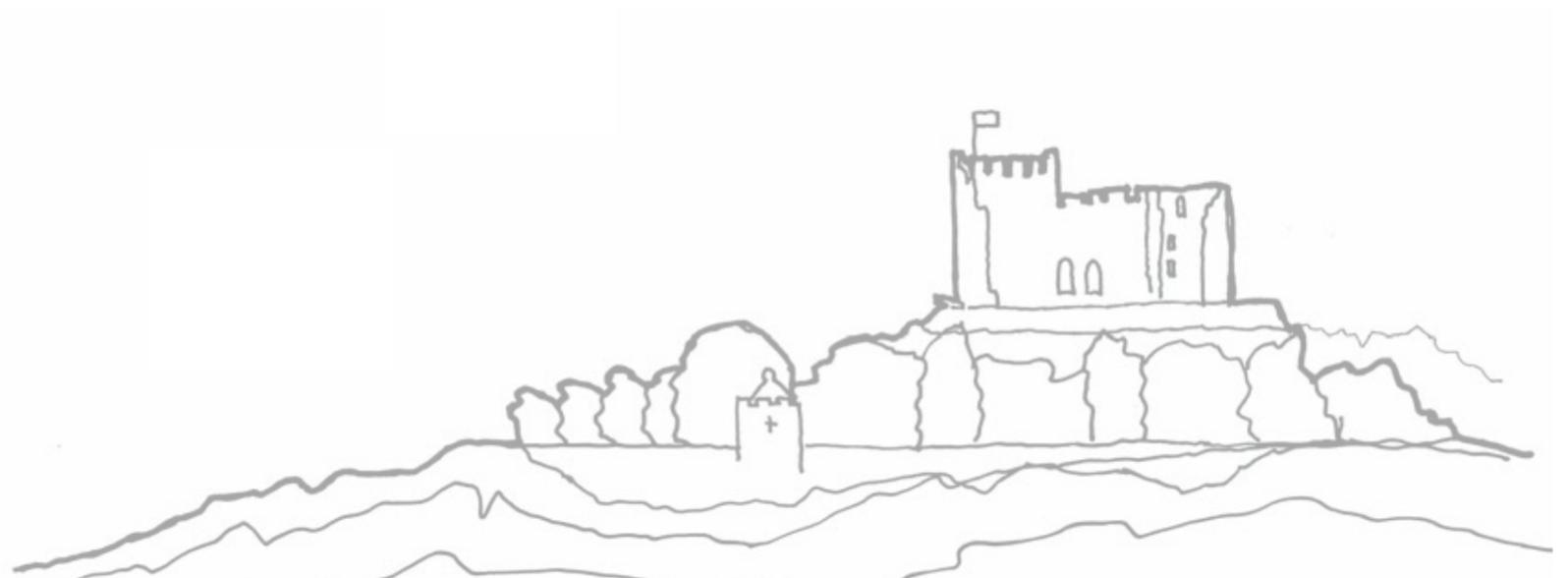
how it can inform the development of schemes in the future when set against this important backdrop. The vision is therefore one of heritage new and old and the opportunity to emphasise the past, benefit from important icons, significant historic developments and to chart the history of Dudley within a series of key historical events.

Castle Hill is central to the development of Dudley's tourism offer, it is key to the transport strategy and connectivity and has significant technology, research educational and leisure opportunities on this and adjacent sites. This will allow Castle Hill to become a central feature for development and engagement of key projects and link future development with its significant heritage.

18.0 Conclusions

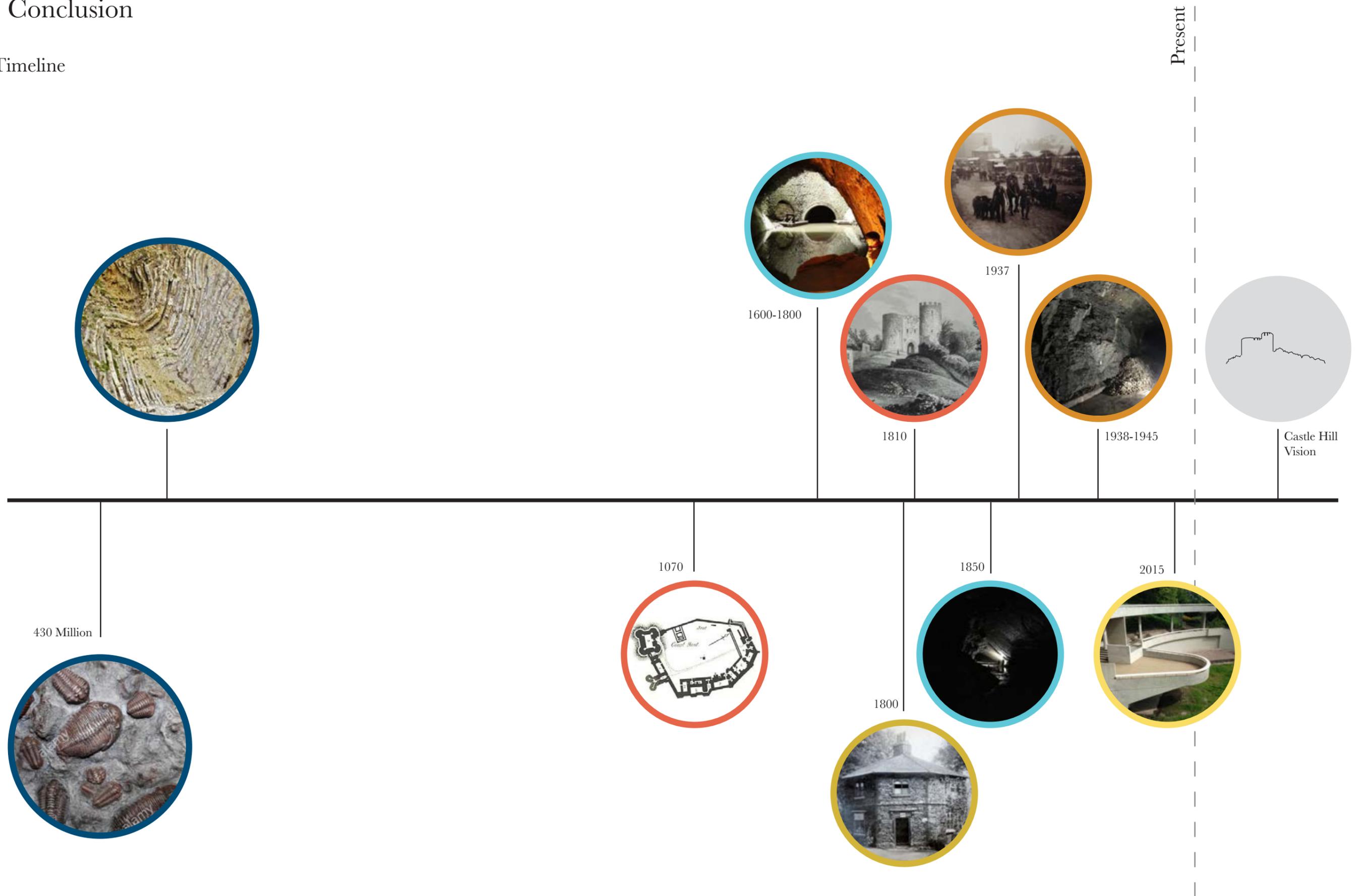
18.2 Project Report Outcomes

1. Identification and summary of the setting in which each project sits.
2. Appraisal of the individual project opportunities
3. Identification of further projects which could enhance and support the project proposals.
4. Review of the funding potential for projects on an individual and combined basis.
5. Summary of stakeholder views and comments along with statutory requirements.
6. Concluding review of the identified projects, opportunities for grouping and their relevance to the local area in terms of the development potential.
7. Wider review of projects on a national and international basis, future-proofing and review of the visitor attraction experience.
8. Suggested hierarchy of projects and timeline for delivery.



18.0 Conclusion

18.3 Timeline



18.0 Conclusion

18.4 Funding

In total, the substantive packages of proposed works are costed at some £13.39m. In combination, they would have a wide range of heritage, community, educational, economic and regeneration benefits. Whilst there is understandable interest on the part of both Dudley Council and DZG in promoting an integrated vision, from a funding perspective we think that there is further work to do to create a powerful enough vision that demonstrates that the whole is more than the considerable merits of the component parts.

For the two largest prospective funders, however, there are arguably differences in the way that the investment case would be made and thus the appeal that a single funding bid (or several larger bids) as opposed to a series of individual bids.

For the Heritage Lottery Fund, the two largest project components – Phase 2 of the Tecton project and Dudley Castle – are distinctively different and can be progressed as separate projects. HLF has significantly less funds available than it did at its peak level some years ago, and places very considerable emphasis on value for money and “why now” considerations (quite apart from the need, of course, to meet HLF’s key outcomes). Thus all other things being equal, separate applications may be the favoured approach.

However, there are two factors that also need to be considered. The first is how the benefit of an integrated approach to the involvement of apprentices in both projects is perceived. The second may be Historic England’s stance. If HE is keen to work in a strategic partnership across Castle Hill with Dudley Council and DZG then the alignment of their funding streams would send a very positive signal to other funders. HE’s Heritage Action Zone programme is conceivably relevant in this context, although the 18 approvals to date have a wider urban, town centre/quarter, housing and regeneration remit than the Castle Hill vision in its current form.

The Black Country LEP has already expressed its interest in an integrated approach to the Castle Hill vision through its acceptance of the initial project stage of the proposition and will obviously be interested to see that nature of interest on the part of HE and HLF.

For Trusts and Foundations and Landfill Tax Distributors, it is difficult to see the added value appeal of bids that span more than one project.

Three funding related outcomes from this study are recommended. The first is to convene an informal meeting with representatives of HE, WMCA/BCLEP and HLF to discuss their respective perspectives to the emerging vision as articulated in this report. The second is to work up the individual projects to feasibility level from their current concept stage. Arising from the first and second tasks, the third would be to refine the integrated plan, to put more ‘flesh on the bones’ and enable the vision-wide threads to be teased out and woven together into a compelling and overarching proposition.

18.0 Conclusion

18.5 Costs

Within this study the durations of programmes and cost have been considered on a project section by project section basis. Collectively there may well be benefits of grouping projects together in order to gain economies of scale efficiencies in terms of cost and programme. Dependent on how the project funding streams come on line, the design team will need to be alive to this opportunity to make the best of the capital available. In tandem with pairing some sections to gain programme and economic advantages, project delivery dates will need to be considered in line with not only the funding stream but the time of year the projects are undertaken, giving cognisance to prevailing weather conditions and expected occupancy rates of the Zoo and surrounding areas. In other words projects centred on more internal workings should be planned for winter programming and works more dependent on the weather in the late spring to early autumn.

BPN ARCHITECTS

3 Mary Street, Birmingham, B3 1UD
Tel: 0121 233 1818
Email: mail@bpnarchitects.co.uk
Website: <http://www.bpnarchitects.co.uk>