




the environmental  
dimension partnership

# **From Bargain Basement to Fine Vintage: A Case of Bats in the Wine Cellar**

Graham Morgan BSc MSc CEnv MCIEEM

# Prologue (1): Small Confession!

- The project was delivered by two other Ecologists
- Both were Named Ecologists at EDP Ltd on the Natural England licence
- Nick is now with ACD Environmental and Charlotte is on holiday in Mexico!
- My involvement was peripheral as their line manager but hopefully I have enough working knowledge!

A blue circular graphic with a white border, containing the text for Nicholas Jones.

**Nicholas Jones**  
ACD Environmental  
(formerly at EDP Ltd)

An orange circular graphic with a white border, containing the text for Charlotte Bell.

**Charlotte Bell**  
EDP Ltd

## Prologue (2): Timeline of Events

- **<2013:** House purchased for renovation
- **2013:** EPS mitigation licence already in place for renovation works to the main house roof (other consultants)
- **2014:** EDP commissioned to assist with renovation works to the cellar
- **Oct/early Nov 2015:** new bat cave operational; bats moved to the new accommodation
- **Nov 2015 – Oct 2017:** population monitoring



# Site Overview (1)

- South-west England
- Main house built c.1760 with later additions in late 18<sup>th</sup> Century.
- Associated outbuildings and grounds
- Immediate landscape context surrounding the house is a mosaic of grassland fields and woodlands – great for bats!



Main House: Grade II\* Listed

## Site Overview (2): Asset Status

- Main house is a Grade II\* Listed Building and was on the English Heritage 'At Risk' register
- 5 species of roosting bat across the site including 3 Habitats Directive Annex II:
  - greater horseshoe
  - lesser horseshoe
  - barbastelle
- Main house: >100 lesser horseshoe in both the roof and the cellar (nationally significant maternity and hibernation roosts)
- **The Do Nothing Option:** Nationally important assets potentially at risk





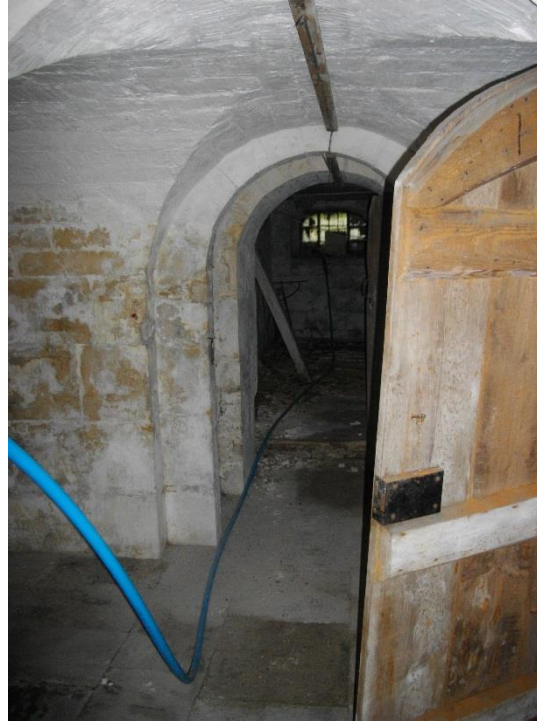
## Site Overview (3): Bat Numbers (Jul 2013-Oct 2015)

- Cellar: lesser horseshoe peak count = Apr 2015 (Spring)
- Roof: lesser horseshoe peak count = Jul 2013 (Summer)

Building	Maximum roost counts				
	Common pipistrelle	Brown long-eared	Barbastelle	Lesser horseshoe	Greater horseshoe
Main house - cellar				104	1
Main house - roof void		5		150	
Main house - northern gable	35				
Main house - gable east wing	15				
Stable block - roof void				5	
Stable block - ground floor				12	
Barn - roof void				2	
Barn - ground floor			1		
<b>Total:</b>	50	5	1	273	1

# Cellar and Proposed Works (1)

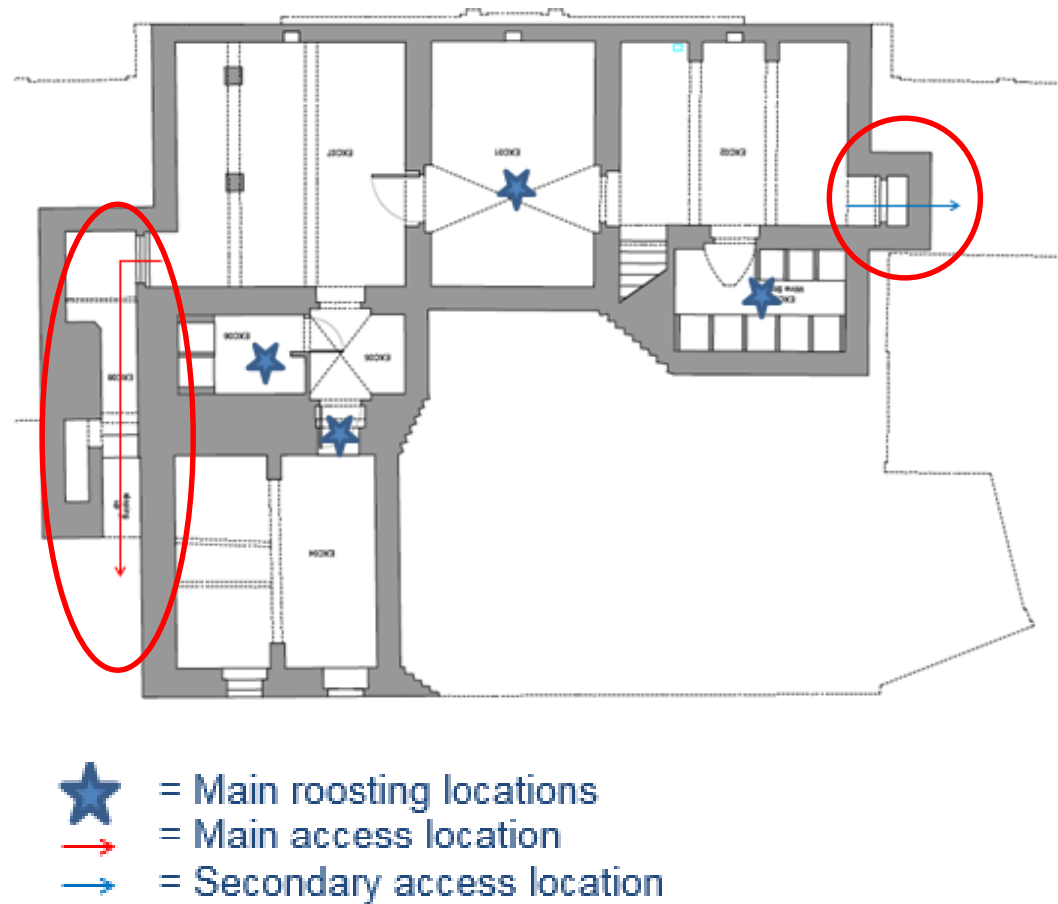
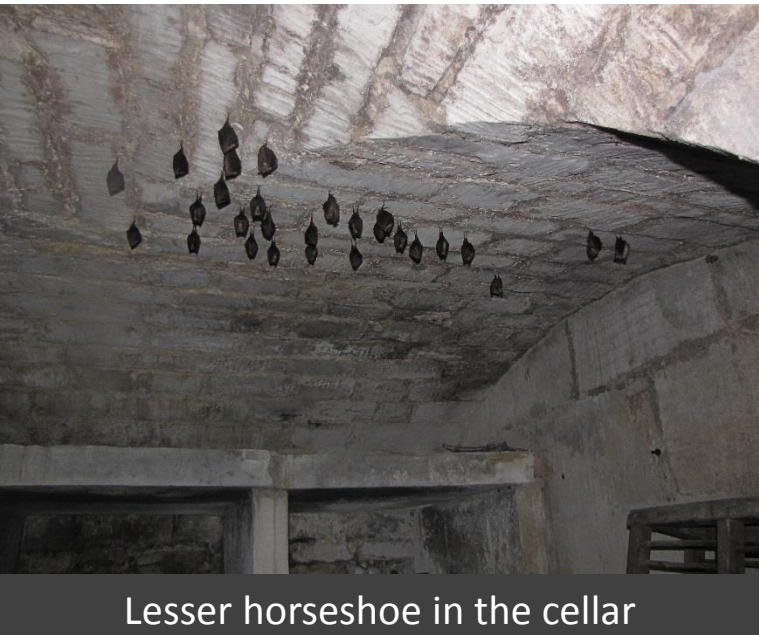
- Large cellar with corridors, rooms and annexes (including wine stores!)
- Works required to allow human use and access
- Involved installation of a new lift shaft and associated machinery, new plumbing pipework and electrics



Bats in a wine store!

## Cellar and Proposed Works (2)

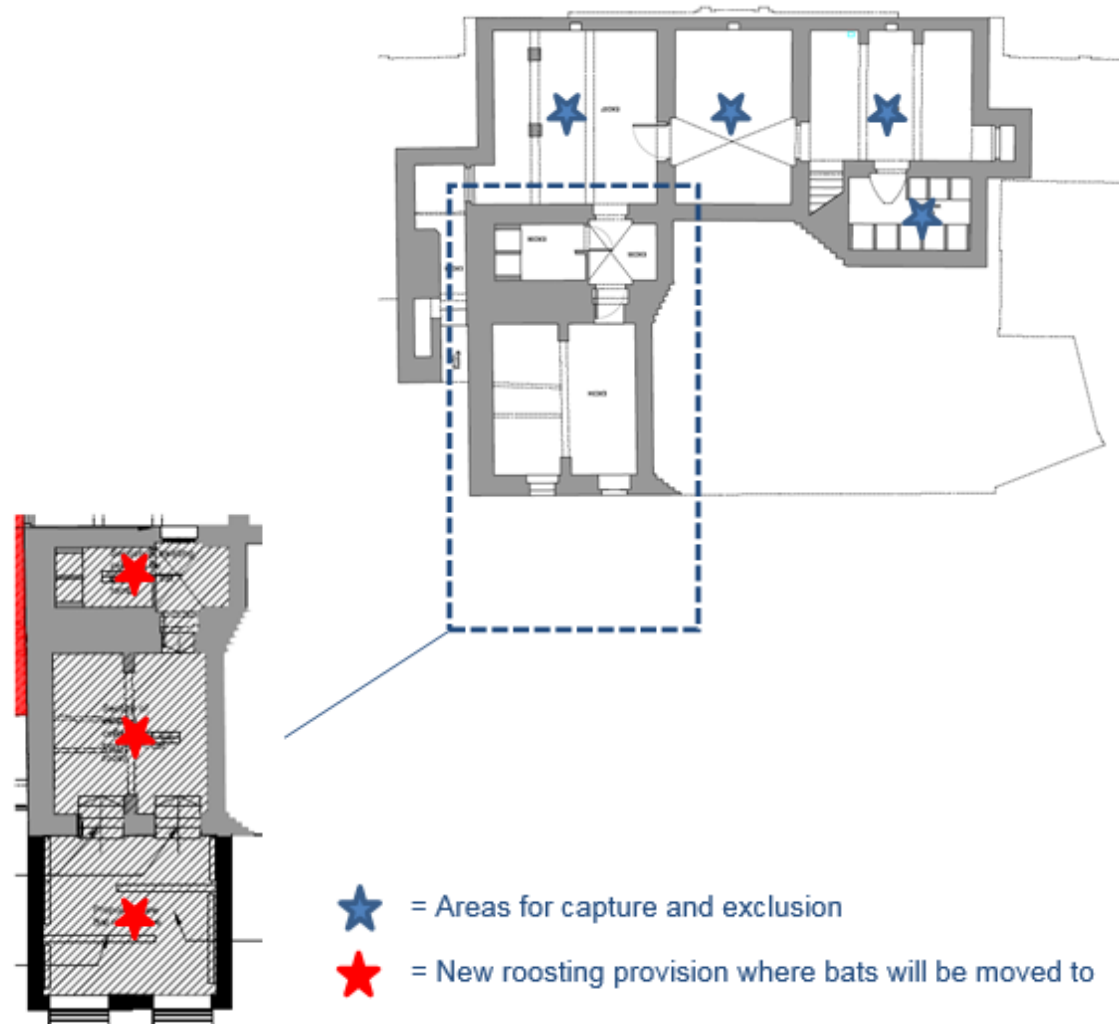
- Bats roosting in multiple locations throughout the large cellar with two access points





# Bat Mitigation (1): Overview

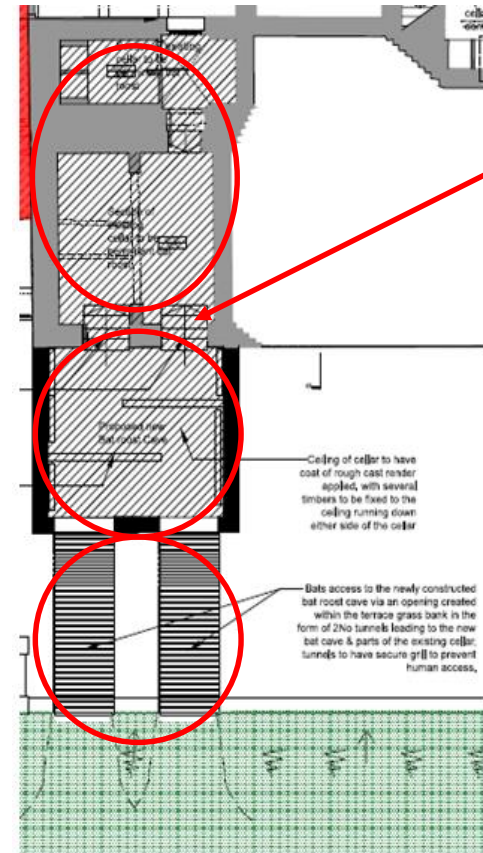
- Retain a portion of the cellar for sole human use
- Retain a portion for sole bat use
- Enhance retained portion with a new bat cave and two new access tunnels
- More viable than a new roost ex-situ roost
- Exclusion, capture and translocation under licence



## Bat Mitigation (2): Structures

- Retained two existing rooms solely for bats (restricted locked access)
  - enhanced with rough timber partitions and box shelving
- Installed a 'bat cave' of concrete and block - a series of rooms with rough cast render, timber beams, with sealed joints and a damp-proof cap to control humidity.
- Created two new openings between the cave and the retained rooms
- Installed two concrete tunnels

**Bat cave = 2.2m (h) x 5.4m (l) x 5.85m (w)**



Retained sections of cellar

Bat cave

Access tunnels

# Construction (1): New Bat Cave Groundworks





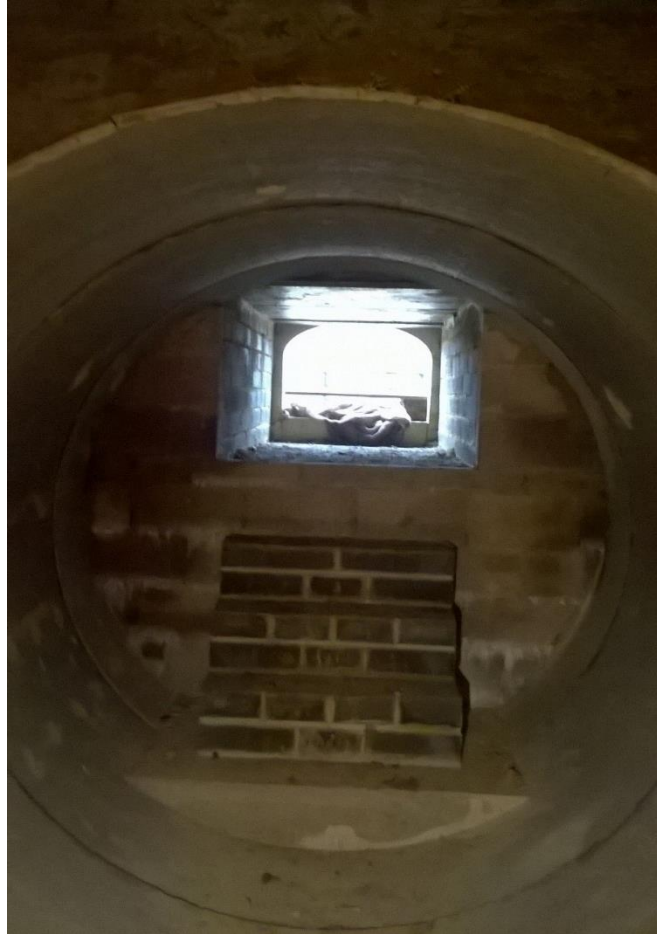
## Construction (2): Bat Cave and Access Points





# Construction (3): Tunnels to the Bat Cave

- Tunnels 2m diameter
- Protected with 60cm x 60cm grilles with bar spacings 15cm high x 30cm long





## Construction (4): Exterior Vernacular



# Mitigation Results and Evaluation (1)

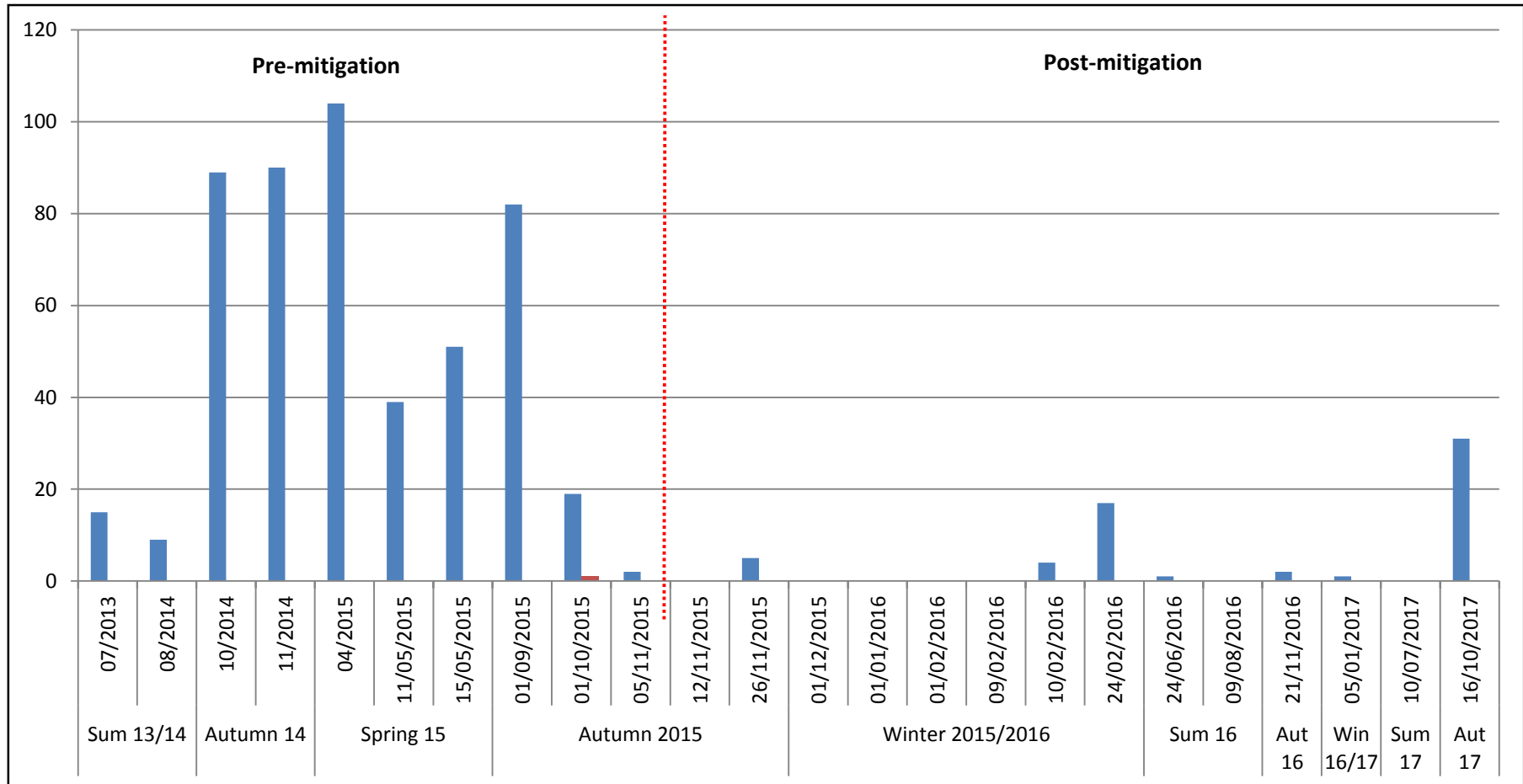
- New/enhanced bat structures operational from early Nov 2015
- Monitoring also undertaken from Nov 2015 – Oct 2017 under licence
- Lesser horseshoe bats continued to use the cellar in low numbers from Nov 2015
- Bat cave first used by lesser horseshoe in June 2016
- Oct 2017 lesser horseshoe numbers up on previous post-mitigation levels



Lesser horseshoe in the new bat cave

# Mitigation Results and Evaluation (2): The Numbers

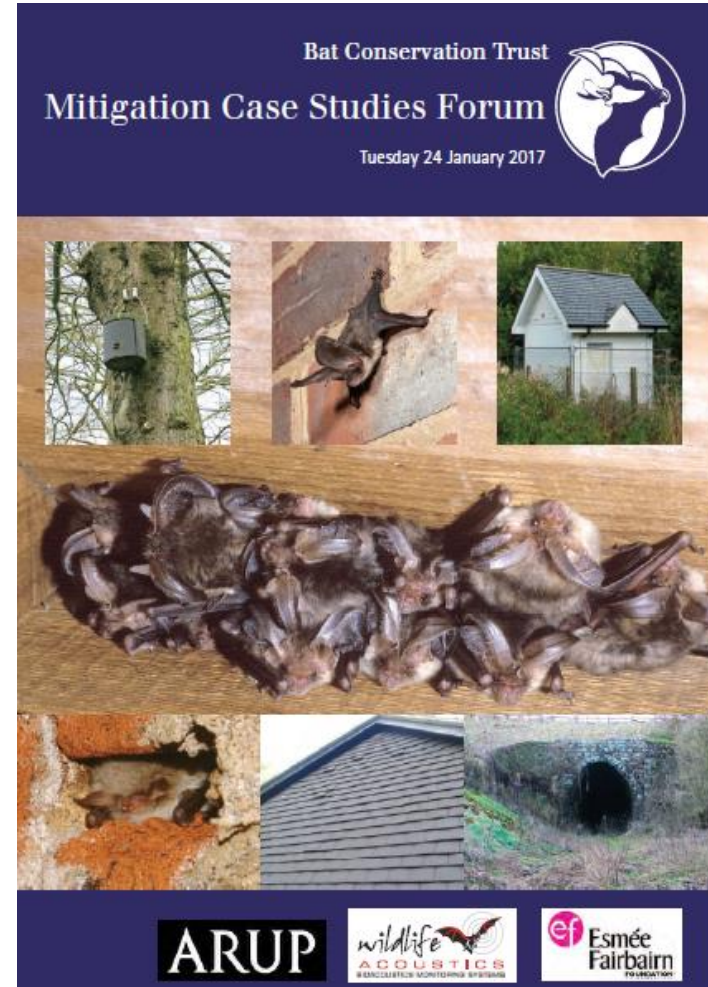
- Lesser horseshoe numbers in the overall cellar pre- and post-mitigation





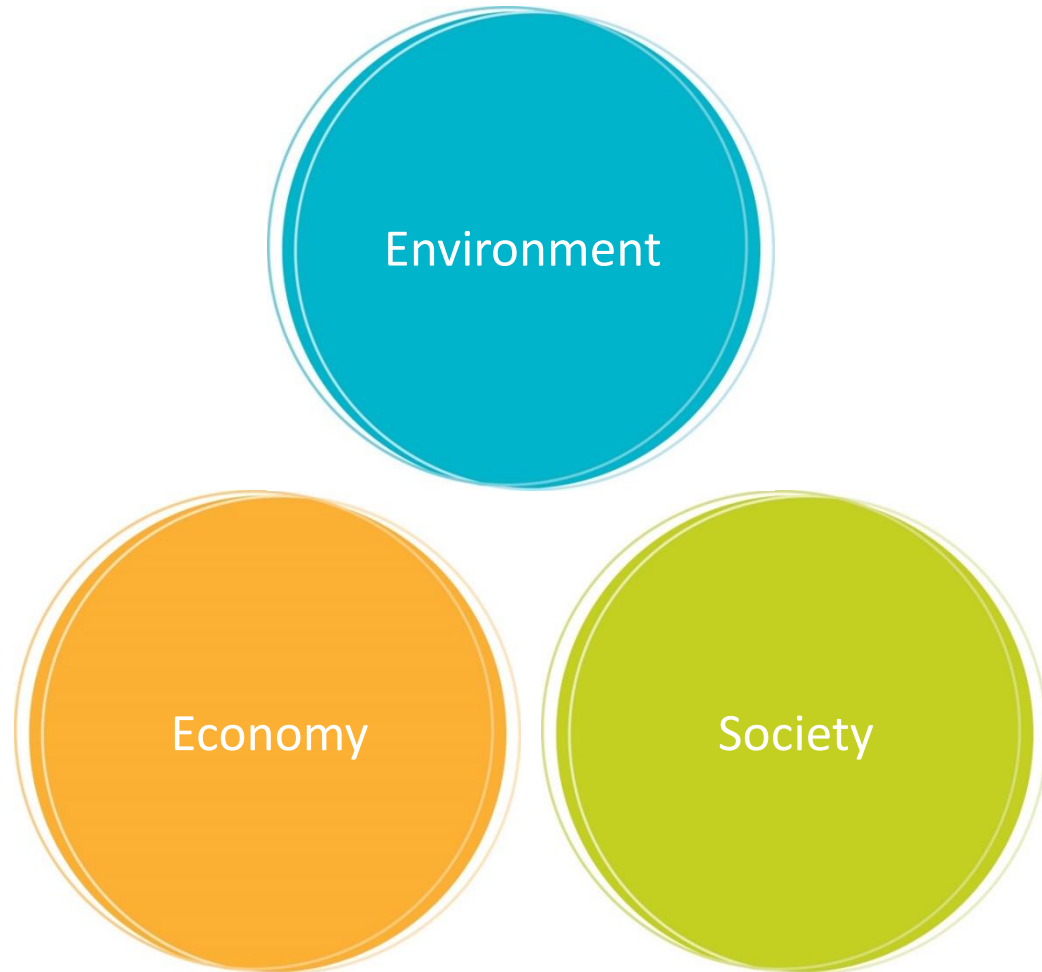
# Mitigation Evaluation (3): Success

- *Yes, bat numbers are currently lower than before but...*
- A nationally significant heritage asset has been saved from decline (and the future of bats at the site secured)
- Ample and suitable subterranean roosting opportunities continue to exist on site
- Lesser horseshoe is still roosting on site in the cellar and the numbers have risen
- Knowledge sharing: at a BCT bat symposium, this CIEEM conference



# Epilogue (1): Key Messages

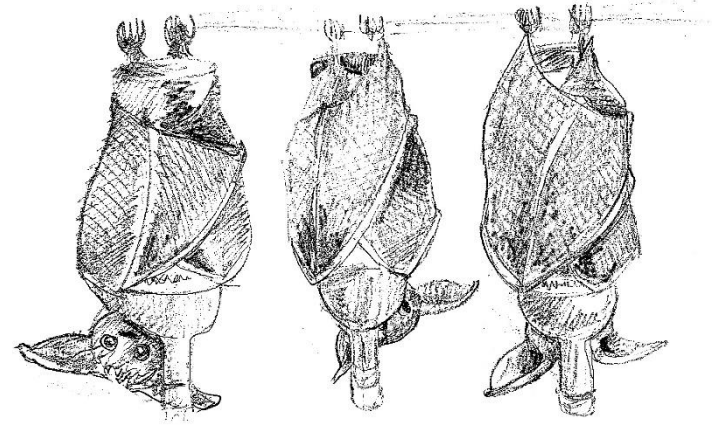
- **The Measure of Success:** It may not always be about comparing the before and after numbers directly
- **Shared Vision:** A galvanised project team = maximum benefits on site, and external profile raising
- **Embed Sustainable Principles:** Co-existence between environmental assets and socio-economic (human) requirements





## Epilogue (2): When the Lights Go Down...

- The bats have a taste for wine now, can they resist?...*



# Question Time



**CIRENCESTER** Tithe Barn, Barnsley Park Estate, Barnsley, Cirencester, Gloucestershire GL7 5EG **01285 740427**

**CARDIFF** First Floor, The Bonded Warehouse, Atlantic Wharf, Cardiff CF10 4HF **02921 671900**

**SHREWSBURY** The Stables, Sansaw Business Park, Hadnall, Shrewsbury, Shropshire SY4 4AS **01939 211190**

**info@edp-uk.co.uk** **www.edp-uk.co.uk**