

Natterer's Maternity Roost at Peckforton Castle, Stonehouse Lane, Peckforton

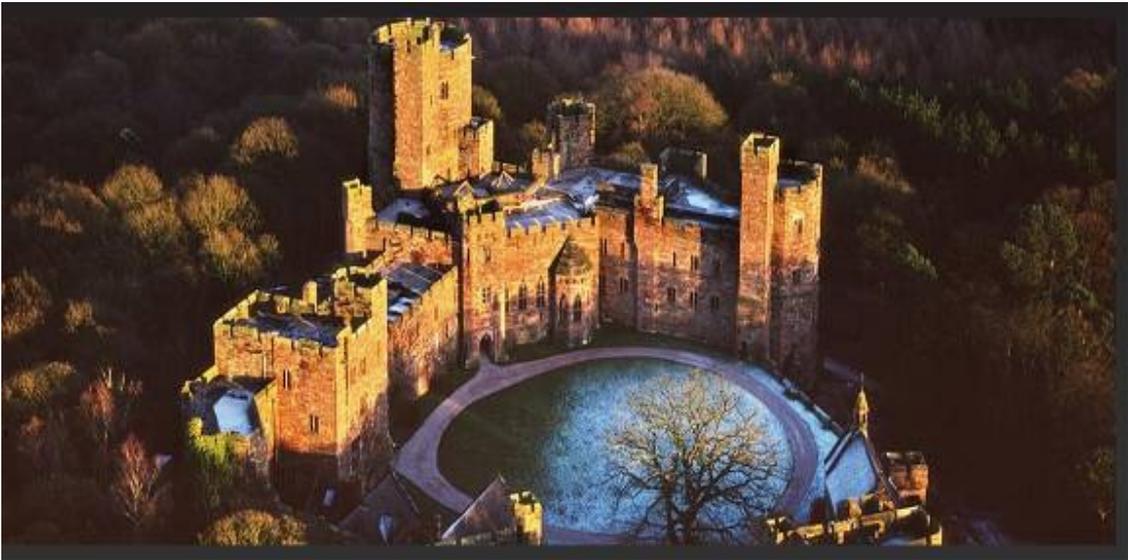
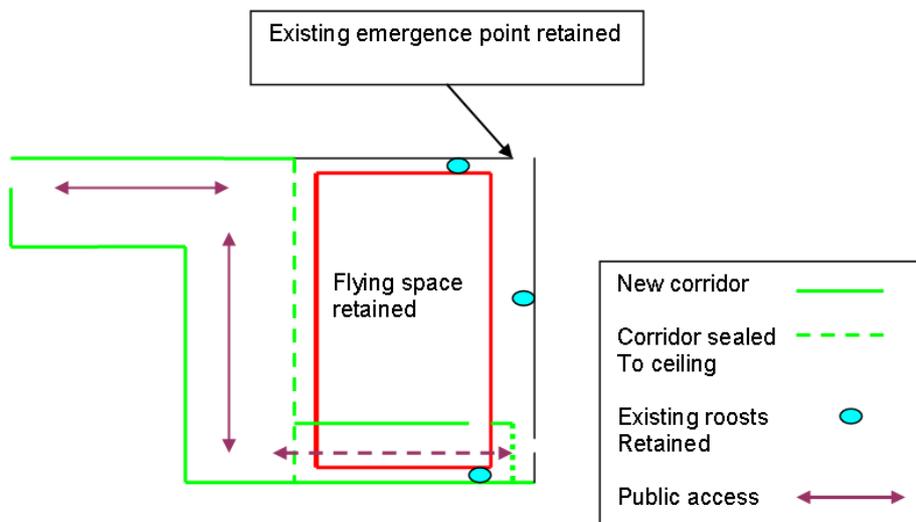


Image courtesy of Peckforton Castle Image Gallery



Peckforton Castle Hotel is a prestigious Grade 1 listed building; however the Bell Tower and West wing remained in its original condition for many years but was due to be refurbished to create additional hotel accommodation. It was first investigated during a daytime survey conducted in May 2009 by Stan Irwin of the Tyrer Partnership on behalf of Mr T Naylor, (Co Director of Peckforton Castle) which concluded that a breeding roost of Natterer's bat, (*Myotis nattereri*) was present and were using internal cavities in the stone walls of one room but were also using the room for pre-emergence flight activities; the emergence/entry point was through a window opening. Subsequent dusk/dawn surveys revealed that the room was used by up to 81 Natterer's bats.

A scheme was devised that would allow the continued use of the room by the bats but allow a corridor to be built that would allow access to other rooms on the West wing which were to be refurbished and resulted in a 25% loss of the room available to the bats. (See below)



Large accumulation of droppings below cavity



Two of three roost entrances in wall cavities

Following the installation of the corridor the roost was monitored which found that the bats had returned in similar numbers. However, since that time due to the guest demand and the need for additional bedroom accommodation the owners decided to convert the Tiverton room (Bat roost) into guest accommodation. The procedures that were proposed represent a compromise between the conservation needs of an important Natterer's bat roost and the hotel owners desire to improve the hotel and progress with their expansion programme.

Further dusk/dawn surveys during 2011 and 2012 revealed that for an unknown reason the Natterer's bats were using the roost in the Tiverton Room to a lesser degree and at times were absent. Notwithstanding this absence data recorded on an Anabat detector during 7th – 9th July 2012 demonstrated that significant level of activity had taken place and they had returned to the historic roost.

The original intention for the room was to retain the two semi-barrel arches in the room and fully convert it to guest accommodation, which effectively would result in the complete loss of the roost. Following discussions and cooperation with the owners of the castle a compromise was reached, which would retain the existing roosts but reduce the height of the flying area but not the square footage.

A European Protected Species Mitigation Licence was applied for and subsequently granted, which allowed the work to take place on the basis that the success of scheme would need to be demonstrated otherwise the room would need to be returned to its original condition.

Subsequently in early 2013 a ceiling was constructed, which retained the existing roosts (See Figure 1) and most notably the two barrel arches within which the bats were using for pre-emergence flight were also retained. The window at which bats exited/entered was modified to a reduced size (300mm high x 400mm wide) and was designed at a downwards angle to facilitate a natural downward exit to nearby woodland and an upwards angle to allow a natural flight line into the created void above the room. (See Figure 2)

Within the void a temperature data logger and a CCTV camera has been installed to monitor the roost; the latter has proved to be very useful; over three manual monitoring visits during June – August 2013 the following results were recorded, although the many many hours of footage has not yet been fully assessed. A hatch has also been installed to allow the periodical removal of droppings.

June 6th Total of 57 bats emerged following pre-flight activity within the void

July 11th No emergence or bat activity

14th August Total of 42 bats emerged following pre-flight activity within the void

The temperatures within the void show, not surprisingly, a general increase of 2-3 degrees Celsius from that within the room before the void was created but during the hot period of July increased up to 7 degrees Celsius at which time bats were absent.

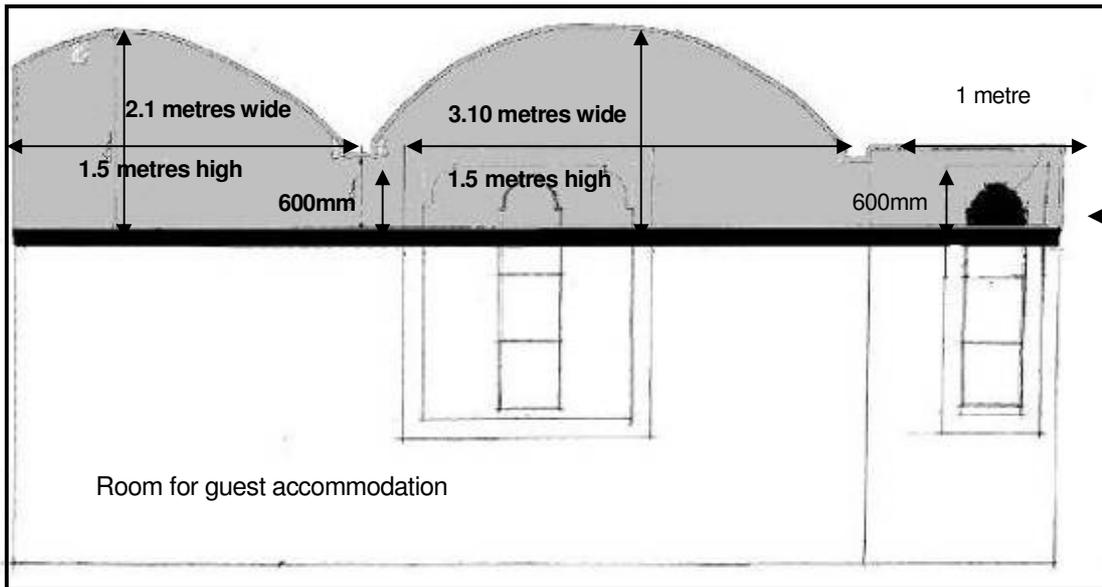
Conclusions

The mitigation has been successful although bat numbers are, to date, reduced, which could be attributive to:-

- 1) The colony has not yet fully adapted to the alterations & are using an additional location within the castle of which there are many
- 2) Reduction of numbers may be natural as a result in poor breeding over 2012-2013

Given that bats have returned, the final work to the room will involve the installation of acoustic insulation between the room and the roost, which should not only prevent noise transfer but also reduce heat transfer from the room to the void and avoid a significant rise in the void temperature; this work will then allow the room to be used as guest accommodation.

Thanks go to Mr Tony Naylor and his staff members Karl and Jason for their continued cooperation and help since 2009.



Modified window exit to dimensions of 300mm high x 400mm wide

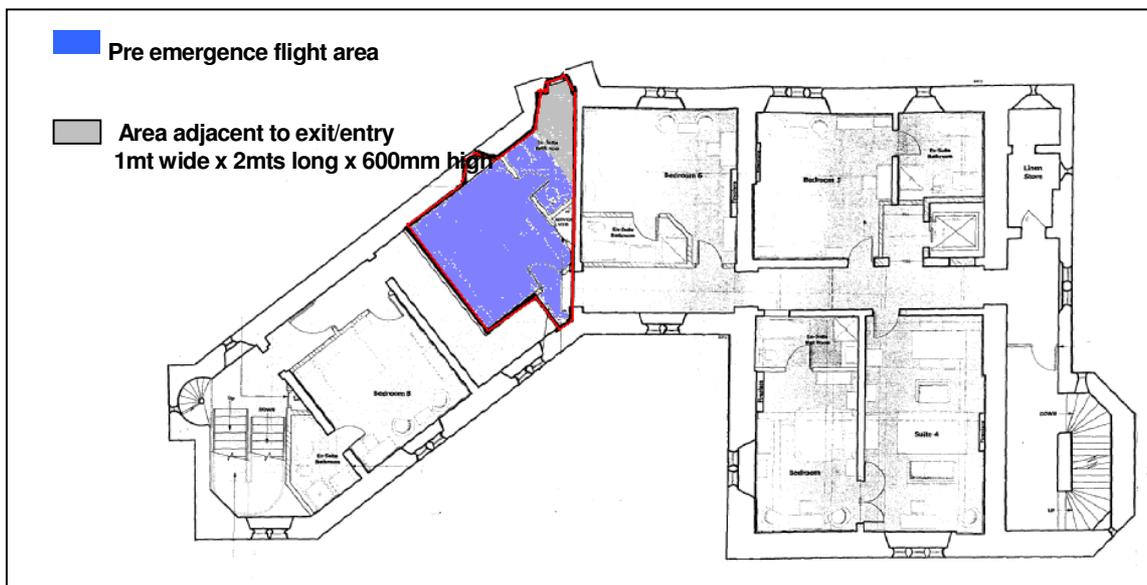
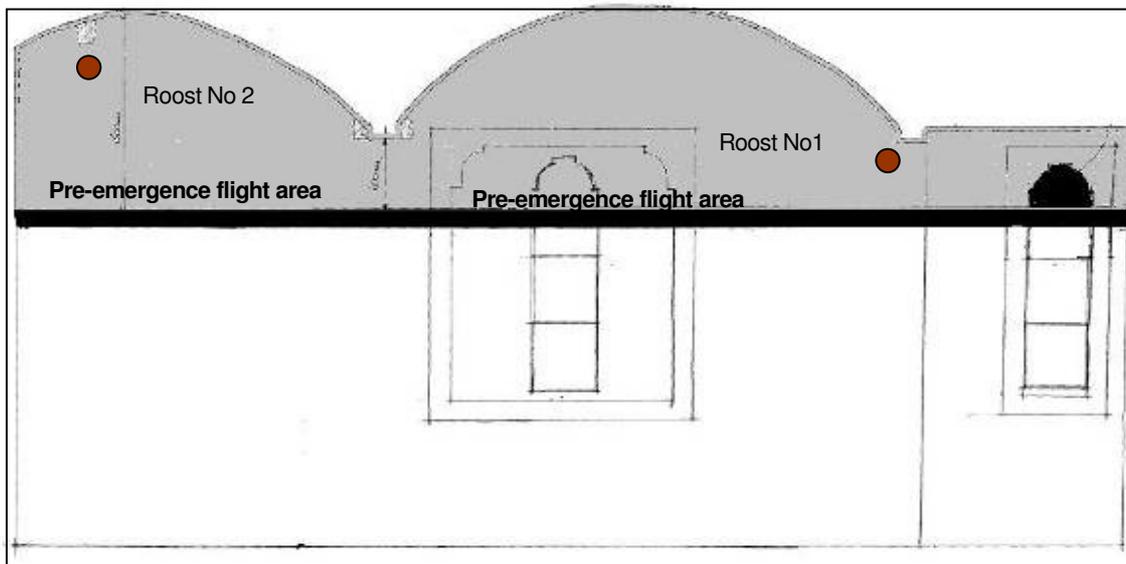


Figure1:

Figure 2:



Roost void with two of three roosting cavities



Modified window to provide natural flight lines in and out