BIODIVERSITY CASE STUDY: Wavendon Towers, Milton Keynes

Picture the scene: Marriott project manager Roland Spikings takes a call from a firm of environmental consultants as his construction team gears up to start work on a major commercial development – the subject of the call. And this particular brownfield site at Wavendon Towers in Milton Keynes just happens to be overrun with enough wildlife to throw even Sir David Attenborough into a spin.

You'd be forgiven for thinking that visions of project delays, additional costs and a less-than-happy client – in this case Kier Property – would be contributing to Roland's angst just then. But as someone who views such challenges as part of the construction process, he not only took it all in his stride, but also grasped the opportunity to forge excellent relationships with this particular band of ecologists – such that they now come to Kier for help.

The original Wavendon Towers was a country residence that was later adopted for commercial use and various extensions were added over time. The building and surrounding area, with its ancient hedgerows and woodland, attracted an interesting collection of tenants including great crested newts, bats, badgers and nesting birds.

It was back in 2003 when environmental consultant Ecological Planning & Research (EPR) was first asked to assess the site for its potential to support protected species. Its relationship with the company flourished as the contract progressed and according to Roland, EPR learned as much about the construction process as the site team did about biodiversity – which was plenty.

"The only thing we didn't encounter at Wavendon was dormice," recalled Roland, "which was lucky because we had just about everything else to contend with."

Small numbers of long-eared bats were identified at two locations destined for demolition. To accommodate this fiercely protected species, bat boxes were built and a dedicated roost was retained in a building which was restored rather than demolished. All trees on site were assessed for bat roosting. Interestingly, bats are discerning tree dwellers. According to Roland, they prefer those spooky-looking 'Hammer House of Horror' specimens – sparsely branched with plenty of room to hang around. The bat boxes themselves posed a problem with potential squatters because, despite carefully positioned 'bat box' signs, the birds chose to ignore them in their attempts to take up occupation!

The nesting birds of which there were many species including migrant warblers from Africa, as well as resident tits, finches, woodpeckers and thrushes, were cordoned off to create a 10m clearance zone. Other tactical measures taken included the diversion of a footpath to avoid the nests. An interesting fact that emerged as part of the process was that it takes only two twigs placed by a bird to constitute a nest which, as such, cannot be disturbed. See fines and penalties!

Luckily, the badgers' sett was positioned just outside the site perimeter which meant they didn't need to be moved – but nevertheless they had to remain undisturbed while works progressed 30m away. The badgers were more of a problem in that they tried their best to disrupt collection of the Great Crested Newts (GCNs), of which there were many and on which the badgers had an over-whelming desire to snack!

How does one begin to round up hundreds of newts to rehome? Roland explained: "The entire site was bunded (fenced off) with the fencing such that the newts couldn't escape but in their search for a way out, were caught in buckets countersunk at the base of the fence. The buckets were netted, not to prevent the newts escaping but to protect them from hungry badgers. Despite their highly toxic skins, newts present a tasty morsel for wily badgers who've mastered the art of skinning them before devouring them!

The newts were rehomed in an area containing two newly constructed ponds. The existing pond was improved with strategically placed planting carried out to allow the newts to move between the old and new ponds. Such was the need to allow the newts easy access to their ponds that even the kerbs in the car park area were lowered – simple but effective.

A site can only be declared newt free if, for five days after the specified trapping period, no newts are trapped. "This can be a frustrating time," explained Roland, "Newts don't keep diaries, their movements are unpredictable and are dependent on several factors including the prevailing weather and ground conditions. One single newt encountered on the fifth day means another five-day wait so it can be a nail-biting time. For us, D-Day came on 10 June 2005, when demolition works could begin."

So with birds trying to muscle in on the bat boxes while badgers remained intent on stalking the newts, it was never going to be easy.

"Timing is the all-important factor when dealing with biodiversity within the construction process," explained Roland. "Getting involved as early as possible at the design stage is crucial to ensure the project programme has a predictable outcome. We are able to carry out assessments in conjunction with environmentalists and provide added value for our clients. Through our experience and by exercising honesty, integrity and teamwork, we are able to demonstrate that wildlife and new development can successfully coexist. And I'm pleased to say that the ecologists with whom we worked at Wavendon Towers completely agree."

Roland has since worked closely with various environmental bodies, imparting information from the contractors' perspective and was invited to speak at the Construction Industry Environmental Forum in May where he joined other speakers from The Green Building Council, Natural England and the Wildlife Trust to speak on the subject of biodiversity and its part in sustainable construction.

Project factfile

Name of project:	**Wavendon Towers**
Description:	**Commercial Development for EDS**
Location:	**Milton Keynes**
Client:	**Kier Property**
Contractor:	**Marriott Construction**
Project value:	**£25m**
Programme	**133 weeks**
Handed over:	**On time and under budget in August 2008**

Peter Johnson.

Roland Spikings.

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Project wildlife

Newts:	**94 days trapping 919 Great Crested Newts**
Birds:	**25 nesting species left undisturbed**
Badgers:	**One happy (but newt-deprived) colony**
Bats:	**Two colonies rehomed**
Woodland:	**Cleared by hand to avoid injury to newts**
Homeless:	**None**

Roland's presentation is available for download on KIER*doc* and he's pleased to share any information with interested parties at Kier. And if you ask him nicely, he may even pitch up and deliver a presentation for you.

It's not simply a question of finishing the job and leaving the wildlife to get on with it either. The process has to continue afterwards – usually through the FM providers. The Wavendon Towers site will continue to be monitored to ensure the new habitats created for the wildlife will help to sustain the existence of the species long into the future.

Kier Group sustainability manager Peter Johnson (the man tasked with putting the E in SHE; that's safety health and environment) commented: "Roland and his team have demonstrated that by taking a realistic approach to what would seem to some as a problematic site, we can not only deliver outstanding results, but also add value for our clients in terms of sustainable development."

Peter, who is passionate about sustainable development and the need to share best practice Group-wide, commented: "When it comes to biodiversity and sustainable construction, Kier is streets ahead of the competition and one of few companies who walk the talk. And if we are to stay ahead, we should all be taking the opportunity to learn as much from each other as we can.

Biodiversity represents just one element of how our environmental performance will be measured in the future alongside the tracking of waste and our CO_2 emissions for example. Being proactive in these areas also sets us in good stead to meet the challenge posed by the recent raising of the bar by the Considerate Constructors Scheme.

Peter's advice for companies embarking on an environmentally challenging project is to get involved with local ecologists early and work closely with them to achieve common goals. Peter, along with the environmental managers from around the Group, is on a mission to gather together as many examples of good practice as possible. Whether you wish to share or acquire information, contact Peter on 01945 582121or your local environmental manager. They are there to help YOU help Kier to stay ahead.

Fines and penalties

The consequences of getting it wrong: depending on the legislation concerned, offences are punishable by fines of up to £5,000 per offence (for example, destruction of a single tree that served as a bat roost or disturbance by excavator of a pond containing Great Crested Newts). Penalties may also include prison sentences of up to six months. In addition, any vehicle used to commit the offence may be forfeited. Either the company and/or individuals may be held liable.

Further practical advice on managing wildlife can be found in the Environmental Section of the new Kier Group Safety, Health and Environmental Management Procedures.