

<b>Best practice example:</b>	Photographic recording
<b>Project:</b>	Ancient woodland feature translocation
<b>Client:</b>	Fusion/HS2
<b>Location:</b>	Calvert, Buckinghamshire
<b>Timescales:</b>	2019 – 2020 (Feasibility study) 2020- 2021 (Translocation works)
<b>Background</b>	
<ul style="list-style-type: none"> <li>Photographic records of the works being undertaken were a component of the client deliverables, but RSK wanted to push the boundaries of what could be achieved with photographic recording to be able to create records that would not just capture moments in time but could be useful for the purposes of long-term monitoring.</li> </ul>	
<b>Go Pro cameras</b>	
<ul style="list-style-type: none"> <li>Go-Pros are the ideal camera for gaining footage from the perspective of the operator. They were used a lot throughout the project to gain point of view footage from a range of machinery.</li> <li>They are predominately used as an extreme sports camera and have highly effective image stabilisation capabilities; ideal for mounting to helmets, chainsaws and machinery. Their accessories (mounts and clamps) allowed the cameras to be placed in locations that would be unsafe for a camera operator.</li> <li>Shooting in 4k and 5k, they also have the ability to create cinematic movies, capturing wide shots of the landscape; they could be strapped to the buckets of excavators and raised to capture a dramatic panorama of the site recording progress across the area, as well as close up shots.</li> </ul>	
<b>Panasonic bridge camera</b>	
<ul style="list-style-type: none"> <li>A fixed lens bridge camera was used to capture high quality progression images around the site.</li> <li>Used with a basic tripod for stability, this was a vital tool for monitoring and was used to capture shots of wildlife around the site, including the abundance of red kites (<i>Milvus milvus</i>) and record the fruiting bodies of fungus as they emerged in the autumn.</li> <li>At the end of the translocation phase of the project, the camera was mounted on a tripod and used to capture fixed point images at ten locations around the site which were assigned an identification number and a bearing. This will enable comparisons to be made in these fixed locations over periods of time – photos will be taken from exactly the same position, height and orientation over time.</li> </ul>	
<b>Brinno construction time-lapse camera</b>	
<ul style="list-style-type: none"> <li>This type of camera is another vital tool for monitoring a site over a period of time.</li> <li>Two time-lapse cameras with long battery life were continually used around site to capture images from the donor woodlands as they were deconstructed and the gradual development of the receptor site.</li> <li>After the translocation phase of the project was completed, the two cameras were placed onto a 20ft mast in the receptor site.</li> <li>These will now capture the gradual development of the site as species establish and will be particularly useful in capturing spring growth year on year. The mast can be raised and lowered in order to service the cameras and wipe the lenses, however the batteries are able to last an entire year.</li> </ul>	
<b>Apeman wildlife camera traps</b>	
<ul style="list-style-type: none"> <li>Three Apeman wildlife camera traps were used to monitor the wildlife using the site throughout the main works. With their night vision capabilities they were very useful for tracking animal movements around the site at night.</li> </ul>	

- We were able to continually monitor the activity at a neighbouring badger sett; the activity at the site did not seem to impact on their behaviour.
- The cameras were also used to identify whether deer were using the site, and at what points they were gaining access.
- The cameras identified a small gap that was being used as a highway for not only deer but for hares, foxes, badgers and many species of game bird.

### Drone photography

- The combinations of the types of photography outlined above will enable collection of lots of different types of photographic data as the woodland establishes, but aerial photography provides a unique type of data which is extremely useful in long term monitoring.
- One of the RSK surveying teams flew their drone across the donor and receptor sites during the main translocation works and again when works were completed.
- The drone will fly over the receptor site each year on the same flight path, to record changes over time.

### Go Pro photography



**Above:** Panoramic view of the receptor site showing workforce mid photo, with fallen deadwood and drainage ditches in foreground



**Above:** One of the climbing arborists removing a section of trunk with a potential bat roost feature, following inspection by the Bat Accredited Agent



**Above:** Excavator removing a section of tree with shears



**Above:** Reprofiled drainage ditch at receptor site – will act as semi-permanent wet feature during heavy rainfall

Bridge camera photography



**Above:** Red kite in flight over receptor site



**Above:** Robin perched in branches of trees at edge of Decoypond wood, adjacent to receptor site



**Above:** Primroses and wood anemone in full flower following translocation by hand



**Above:** Fungi on section of decomposing deadwood at the donor site which was later translocated

**Fixed point (FP) photography**



**Left to right:** FP7 – photos taken in March, April and May show the emergence of the first flush of ground flora, dominated by bluebells.

**Drone photography**



**Above:** One of the donor sites during deconstruction



**Above:** Shot of eastern side of site during early translocation – bog mats and pieces of fallen deadwood visible



**Above:** The as built CAD drawing has been mapped onto a drone photo which will enable an aerial level of monitoring over time.