

Habitat Protection & Nature Conservation

In today's ever developing world our countryside is disappearing, and very often it is our wildlife and loss of their habitat that can suffer. Using trenchless solutions, the impact and damage to our environment and wildlife can be less disruptive compared to traditional open-cut methods.

Renovation of culverts using GRP liners can often disturb the wildlife habitat but iLine Technologies have come to the rescue with some novel solutions to protect the future. Working closely with Channeline International, manufacturers of bespoke GRP segmental liners, iLine have been able to incorporate mammal ledges, bat boxes and now recently fish baffles (which slows the flow down enable fish to breed) into the design of our liners, to try and minimise these losses. This has enabled iLine to satisfy not only Natural England but also the EA and various wildlife groups. By working together, we are able to protect our environment and preserve the future of our local wildlife habitats.

Example 1

When Leicestershire CC approached iLine with a possible culvert renovation scheme, one of the main concerns was the preservation of existing bat roosts within the structure. The existing brick arch structure 2.7m span by 2.28m high serving Grace Dieu Brook was in poor condition and because of its size and shape, bespoke GRP segmental units were proposed to renovate the structure giving it a new 100-year design life.

A wildlife survey was undertaken which recommended maintaining the existing bat roosts within the structure. Following comprehensive consultation with Natural England, EA and the Council, a methodology for reintroducing bat roosts back into the GRP liner was agreed. The GRP units were installed onto a new concrete invert and then the units were grouted into position. Work was then carried out to create the new bat roosts.



Example 2

Northamptonshire Highways had a failing 1.8m high by 3m wide brick arch structure in desperate need to rehabilitation. iLine, in conjunction with Channeline International designed a bespoke fully structural standalone GRP segmental liner to restore the structural integrity of this structure. Following further discussions with the EA, a requirement to accommodate safe movement of badgers, otters and other wildlife through the new structure, was required. The profile of the GRP units were then modified to incorporate a 500mm wide mammal ledge in the final structure. In addition a stone invert was installed inside the new GRP structure, to reduce the velocity of the flow to aid fish movements and breeding requirements.

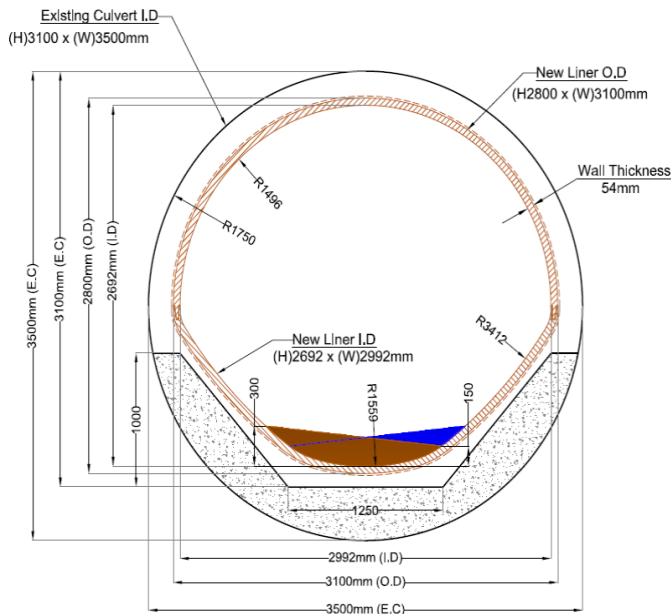


Example 3

Essex Highways had a 3m wide by 1.5m high concrete box section in need of strengthening but also a requirement to protect the movement of mammals in this location. Initially a bespoke GRP segmental liner with a built-in mammal ledge was proposed. However, because of the shape of this unit, the flow capacity was severely restricted. Designs and flow calculations were then undertaken by iLine, and finally it was agreed between all parties, that a 500mm wide preformed GRP ledge was to be fixed to the inside of the GRP liner. This was supported on GRP brackets chemically anchored into the units. This novel design reduced the impact on the flow. The fully structural 56mm thick GRP box section units were installed. The mammal shelf with an anti-slip coating was installed on completion of the main works. Work being completed to the satisfaction of all - hopefully including our mammal friends!



Finally, in some environmental sensitive areas such as fish breeding streams, fish baffles can be incorporated into our GRP segmental liners. These when placed in the invert slow the flow and aid the passage and breeding of fish.



Remember, it should be our duty & responsibility to protect our wildlife and environment for the future generations to enjoy; we at iLine take this responsibility very seriously.