

University of Exeter – The Forum Building

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Client: University of Exeter – Estate Development Service (EDS)

Introduction

The case study aims to assess the success of the biodiversity measures implemented as part of the BREEAM and planning process of the Forum construction. Moreover, show that the development of buildings and infrastructure can have a *beneficial* effect on the ecological value of the site, and attempt to *communicate* this success to the student body and key stakeholders. This generated incite hopes to help *inform* future developments.



Forum Building- a development completed in 2012, which aimed to maintain the ‘special relationship’ found in campus between buildings, topography, and landscape.

The Forum (2012) was constructed on a site of previously developed land: consequently, the development was able to limit its impact on the local environment. It was not a designated site of nature conservation value, hence is determined as a site of low ecological value. The site does however lie within an area of local interest for nature conservation, which therefore required that any damaging impact should be kept at a minimum and compensatory measures to be implemented.

Through hard and soft landscaping a variety of new habitats were constructed to improve the ecological value of the land, which otherwise may have been left as low value ecological space. Post completion, the University of Exeter grounds team have maintained and added to the planting and ecological value of the surrounding area in line with the Biodiversity Enhancement Plan.

A BREEAM *Excellent* was achieved on the project. BREEAM (British Research Establishment Environmental Assessment Method) reviews various elements of a development: relevant to this case study is the impact on Land Use and Ecology). Other areas assessed included Management, Health & Wellbeing, Energy & Transport, Water, Material & Waste and Pollution. A particularly strong score was achieved for Land Use and Ecology, highlighting the success of the measures taken to improve biodiversity. This consultation continued throughout the development, with the appointment of a qualified ecologist who advised on enhancing and protecting site ecology.

Before

A site survey was undertaken to establish the ecological value of the land, and to suggest where improvements could be made, through a desktop and field survey (EAD Ltd).

The existing habitat was surveyed by Buro Happold in Ecological Scoping Report, designed to establish habitat worth saving, ecological constraints on the build and areas recommendations for improvement. Some key regions of habitat that were identified as meaningful. These were considered important as part of mitigating and compensating any negative impacts of the development, including: the *scattered tree habitats*, the *mixed plantation woodland*, and the *semi-improved natural grassland*.

Some notable species identified within the site-boundary, which required special attention and conservation were: primrose, silver birch, cedar, the great crested newt, any bat species, dunnock, and song thrush.

During

A series of recommendations (**See Fig 1.**) were put forward to enhance the site ecology, and mitigate any potential negative impacts:

- Minimise the removal of trees within the mixed plantation woodland in relation to proposed southern access road.
- Creative of extensive green roof habitats on new buildings and potential retrofit of extensive green roofs onto existing buildings.
- Creation of semi-improved neutral grassland/ native shrub mosaic to the southeast turning area within the central part of the development.
- Creation of pond/wetland feature through sustainable Urban Drainage.
- Integration of native tree and shrub planting through open space within development on a north-south alignment.
- Avoidance of public realm lighting along southern access road. If not possible, proposal of low level bollard and cowled lighting.
- Integration of bird and bat boxes into new built-form and installation of similar box types into retained habitats.

Today

The amenity grassland area improved to the north of the development

Outside the library area to the in the north east corner of the development was improved with a mixture of trees, and a scrub mosaic.



Bird and bat boxes were integrated into the mixed woodland habitat.



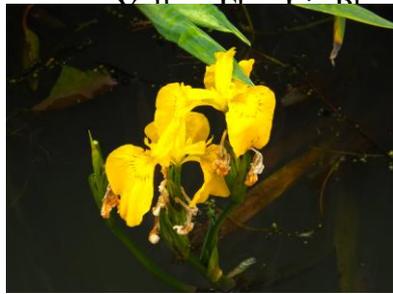
Blackbird

Creation of pond/wetland feature

A pond feature was created in the southeast corner of central development. Pond dwelling plants were laid to create a lush aquatic habitat, and enhance the local wildlife. Attempting to create a diverse habitat home to a host of water-loving animals: frogs; newts; fish and insects.



Pond located at the southern entry to the Forum.



Yellow Flag Iris



Bog arum

Water lilly



Mallard

Native tree and shrub planting through open space within development.

Taking on board the recommendations from EAD, over twenty elegant silver trunked trees have been planted around the Forum. Some, in a north-south alignment along the development, and others planted in the plaza areas outside the great hall.



The estate development team has been able to match the demands of the BREEAM assessment:

- Demonstrating that the majority of the footprint of the proposed development falls within the boundary of previously developed land.
- The site's construction zone is defined as land of low ecological value and all existing features of ecological value will be fully protected from damage during site preparation and construction works.
- The design team appointed a suitably qualified ecologist to advise and report on enhancing and protecting the ecological value of the site; and implemented the professional's recommendations for general enhancement and protection of site ecology.
- Where there is a positive increase in the ecological value of the site.

Summary

The BREEAM assessment award the Forum construction an **excellent** rating. For the Land Use and Ecology assessment, an above average 80% rating was achieved: therefore emphasising the success of the measures implemented to improve biodiversity. This survey is to highlight the positive impacts of the habitats created, and the trees and plants that were laid around the site. Many of the measures suggested during the preliminary ecological survey were implemented to the benefit of the local area. The pond has been a great example of success: similar attempts to create new habitats should be carried forward into the development of new buildings. The Forum development, along with the Business School, has shown that development of buildings and infrastructure can have a beneficial effect on the ecological value of the site.

The following new habitats were integrated into the development:

- Creation of a new native, species-rich hedgerow;
- Creation of wildflower meadow, as a mosaic with areas of amenity grassland;
- Creation of formal ponds;
- Creation of a wetland;
- Using native plants and plants with known wildlife value within the areas of public-realm planting.

Not only does improved biodiversity benefit the environment, but also a more colourful campus benefits students. Soaring insects, and singing birds provide a beautiful harmonious backdrop to the academic work occurring on campus. Described as the 'best-gardened campus in Britain', Exeter's green setting provides a significant cultural value that has been created through the hard work its staff. However, this reports argues the success of these efforts should be more closely integrated with the student experience. In response, suggested are some further messages to maximise the project's success.

Recommendations

- More care required for the pond, perhaps some clearing and dredging. The water level was quite low, full of plant material and uninspiring in terms of

wildlife. A definite success, however the pond requires constant maintenance to maximise its benefits.

- More communication should occur amongst the EDS and the environmental societies of campus, possibly involving them in some of these maintenance activities with any interested parties and key stakeholders, similar to what occurs with the national trust. Perhaps some research could be undertaken into how to attract particular species e.g. amphibians.
- Information boards around the pond, and other habitats, explaining to the key stakeholders what is there and what to look for. This development has been a clear success, and students enjoy basking in the developed areas. But, the work undertaken could be communicated more effectively.
- Summer walk with students, perhaps around the campus in the summer with an expert that possesses species knowledge.
- Plant species that would specifically attract certain insects, perhaps creation of a butterfly or bee garden, perhaps a flower garden in some of the amenity grassland.
- More bird, bat and even hedgehog boxes.
- #lifeoncampus – get the student body to take a photos of any wildlife on campus, and post on twitter? To raise awareness of the campus.
- Night time surveys, to explore the impact on nocturnal wildlife.
- Man a stand as the Green impact team in the forum, and advertise the wildlife on campus to the student body.

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Caveats

Wasn't able to get on the roof to assess where the heron gulls were going

Time of year

Time constraints

Wanted to give a more quantifiable report

Fig 1. – Proposed Site Landscape Plan.

