

University of Sussex – East Slope Project
University of Sussex, Falmer, Sussex.
Balfour Beatty

BIG Biodiversity Challenge Award Category: *Biodiversity Legacy*

Project overview

The project is part of the University of Sussex masterplan proposals and consists of chalk material excavated as part of the east slope project elsewhere on campus that would otherwise go to landfill being re-used to re-profile the land and create the correct growing material for species rich calcareous grassland.

What were the biodiversity conditions on site, prior to the enhancement?

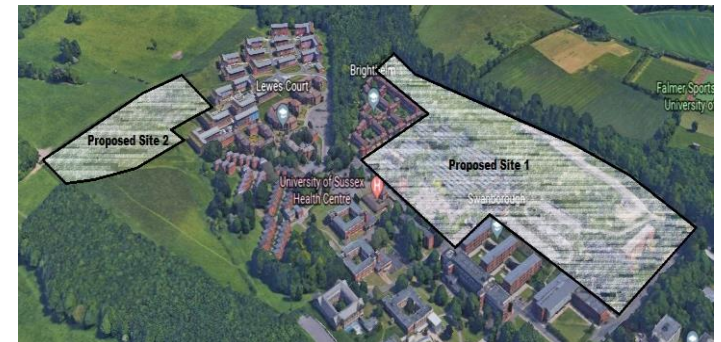
An ecology report and survey of the site concluded the area is of limited ecological value and consists of establishing rank grassland and ruderal community, typical of recently broken ground.

The proposals form part of the landscape and biodiversity mitigation measures set out in the University's approved campus masterplan, the main project objectives are:

- Creating the right underlying growing medium for the calcareous grassland
- Ensuring locally appropriate plant species are used
- Creating climatic conditions to benefit invertebrates
- Ensuring the calcareous grassland survives and thrives
- Returning the site to open access recreation land

What were the reasons behind this project ?

As part of a local authority planning requirement for the UoS Masterplan it was identified that the project will result in the sustainable re-use of suitable construction waste, biodiversity and landscape enhancement and beneficial scientific research and interpretation. Consequently, it is considered that the principal purposes of this development are in the public interest and accord with the National Park purposes of conserving and enhancing the natural beauty, wildlife and cultural heritage of their areas and promoting opportunities for the public understanding and enjoyment of the special qualities of their areas, all these factors align with Balfour Beatty corporate strategy.



(1) East Slope Development Site, (2) Calcareous site



Example of Lowland Calcareous Grassland:

What were the biodiversity measures taken?

The combination of both calcareous and east slope development as included significant mitigation, protection and enhancement measures which have significantly improved the biodiversity of the area, these consisted of:

- Updating the original EIA surveys to gain an up-to-date record of existing species such as badgers, bats, reptiles, newts etc.
- Implemented badger mitigation to close setts and relocate badgers during the construction works, these setts were then reopened once the local works were completed.
- Work was undertaken with a local ecologist to put a Bat survey and protection plan together. This plan included activities such as existing building surveys to identify roost potential as well as dusk/dawn bat surveys prior to demolition works. Lighting was specified with bats in mind so that it did not interfere with any hunting or travel routes identified in the surveys.
- 4 Bat boxes were constructed on site and placed in a near by woodland to encourage bats to the finished development.
- Tree and root protection zones put in place to mitigate risk to existing trees on site.
- 700m of reptile fences installed along woodland boundary of the site as well as capture and relocation exercises.
- 9 buildings have green roofs with log pile habitats to increase possible biodiversity.
- Net gain of 500 trees across the site, some of which are native Elm trees to increase the national elm collection which is located in Brighton & Hove.
- 1.1 Hectares of calcareous hydro seed mix on newly formed slopes as well as 1.7 hectares of wild flow grass seeding across the site.
- Reuse of 20000m³ of chalk to landscape the existing hillside for the 2 hectares of calcareous grassland.
- Calcareous workshops undertaken with the university to ensure the best possible species inclusion within the seed mix.



Placement & Compaction of chalk from main site to form the calcareous sub-base - 13/08/2018



Completed Calcareous seed mix zones with main east slope construction site in the background - 29/04/2019

Further information

Works started on the calcareous site in July which made transporting materials across the campus easier as most of the student population were on summer break. On site top soil was removed and retained for future use, 20000m³ of existing chalk was excavated and transported from the east slope development and stored at the calcareous grassland. The existing slope was graded to create structural stepping which was then filled with stored chalk. Once established the fences will be removed and the area will be returned to public space which will include signage informing the public of the biodiverse grass lands and the species this will benefit. Early engagement with the university such as Dr Alan Stewart who is a Dr of Ecology was key to understanding the scale and scope of the proposals as well identify how this could be improved. At present the biodiversity net gain is dependent on the success of each of the seed mixes and how they establish on the different types of substrate but this is seen as a purpose full exercise which will benefit similar calcareous reintroduction projects.

The remaining mitigation and biodiversity enhancements for the east slope development were undertaken during the phased construction works and as seasonally required, these were monitored during installation by the project's environmental manager.

Project Team

- University of Sussex & Balfour Beatty Investments
- Balfour Beatty
- Fabrik

What was the motivation for carrying out the enhancement?

Balfour Beatty feel that any action we can undertaken to minimise and reduce impacts that our industry creates is beneficial and the future benefit this project will have to other grass land reinstatement projects will provide a significant legacy for this project.



Proposed Landscape & Roof Design



Constructed Unit showing Green roof, Tree Planting & Hydro seeding with native calcareous seed mix