The site of the UEL Beetle Bump had previously been designed as a hibernaculum for wildlife, by piling recycled hardcore from the construction site into the unusable area and capping with screened recycled soil. Despite being seeded, the area was dominated by compacted bare clay of limited wildlife value. The area was domed, with a sunny aspect, offering an ideal opportunity to create an open, mound-filled habitat area suitable for the Streaked bombardier and other ground beetles.

At the time of habitat creation, there were no known sustainable populations of the beetle, with all modern records of colonies being on brownfields in the mounds of rubble and soil that resulted from site clearances as part of redevelopment. Previous Buglife fieldwork has suggested the beetle’s preference to be the interface between broken brick or rubble and soil, with most being found by simply pulling out bricks and finding them in the tight space underneath.

Staff and volunteers from Buglife, UEL and the London Wildlife Trust undertook all work by hand due to limited access.

**Buglife habitat work undertaken**

- To create the appropriate habitat, a range of aggregates were obtained: broken sandstone brick (20t), screened recycled topsoil (20t), ‘as dug’ quarry chalk (10t), and 75mm crushed concrete (10t).
- Two large mounds were created using broken brick provided by Weinerberger Ltd and screened recycled topsoil, to mimic the site clearance materials housing known populations. Initially a brick ‘pavement’ was created, by simply laying bricks in a single layer across the

**Key species of this habitat**

Streaked bombardier beetle (*Brachinus sclopeta*), Mellet’s downy-back beetle (*Ophonus melletii*), Brown-banded carder bee (*Bombus humilis*), *Amara* spp. (Streaked bombardier host species).
Key features for invertebrates

- South-facing mounds including rubble and broken brick for the Streaked bombardier beetle.
- Diverse flora providing forage for a range of species including, root, stem, flower and seed feeding species.
- Mosaic of bare friable ground, chalk, sand and clay, with early successional vegetation for a range of active ground beetles and spiders.

mound area. Mixed wheelbarrow loads of broken brick and topsoil were then piled on top of the pavement, to a maximum height of 50cm. The mounds were laid in a general east-west direction, to maximise south-facing aspects. Within the mound, a number of carpet tiles and tyres were buried and half buried to provide localised microclimate variation and sheltering opportunities.

- The remaining broken brick was used to create a stand alone brick pavement area.
- Chalk was used to create two single substrate mounds, with material varying from large boulders through to powdery material, ensuring a range of topography. The aim was to create pockets of calcareous character to add diversity to the site, but also to offer potential habitat for the scarce Mellet’s downy-back beetle (Ophonus melletii).
- The crushed concrete was used to add some variation to mound areas, however, most was piled to create ‘ground sculptures’, with piles laid out with aesthetics in mind.
- A small volume of the broken sandstone brick was found to have been worn down into sand. As a small diversifying feature, a small section of the Beetle Bump’s south facing slope was cut out and back-filled with the sandy material.

This small, south-facing sand bank is designed to offer nesting habitat for solitary bees and wasps.

- A diverse seed mix, rich in typical brownfield annuals was hand sown at a low density across the site, to help speed up colonisation of the site and overall aesthetics. The mix included species such as Black horehound (Ballota nigra), Weld (Reseda luteola), Red bartsia (Odontites verna) Knapweeds (Centaurea spp.), Wild carrot (Daucus carota) and Common bird’s-foot trefoil (Lotus corniculatus).
- To provide an instant improvement aesthetically, plug plants of Wild carrot and Autumn hawkbit (Leontodon autumnalis) were planted.

Monitoring and management

Long-term management will be undertaken by UEL, consisting only of occasional strimming to prevent vigorous species dominating. UEL staff have been monitoring the development of the Beetle Bump through both vegetation and invertebrate surveys, as part of their research into creating brownfield urban landscaping for wildlife.