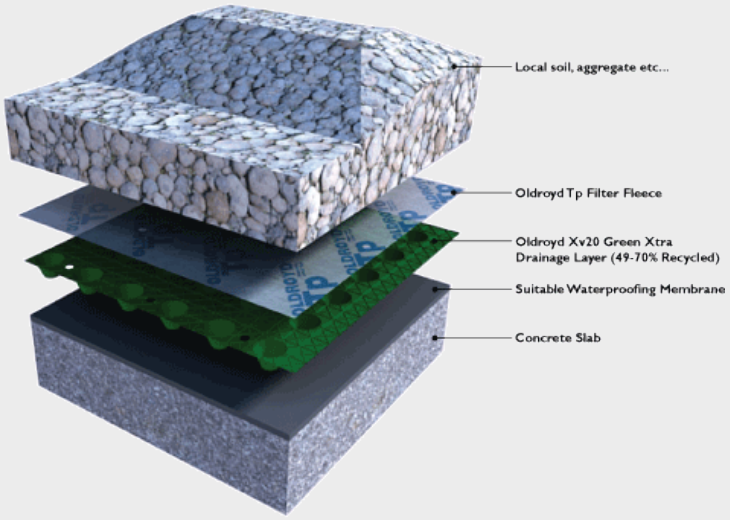
Typical Brown Roof Buildup



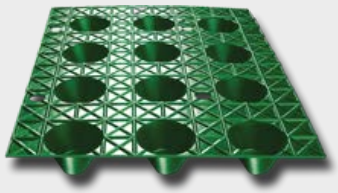
The layer build-up for brown roofs is similar to that employed for flat green roofs - the key difference being the fact that the top layer consists of a varied range of growing mediums, usually collected from the local area. These growing mediums are usually selected to maximise biodiversity. The diagram on the left shows a typical example.

Waterproofing Layer

The waterproofing membrane can be of virtually any type suitable for flat roof applications. However it is essential that it is installed correctly as it will be difficult to access the waterproofing layer if repairs need to be made. For this reason it is always advisable to flood-test the waterproofing layer before subsequent layers are installed. Ideally, the waterproofing layer will also act as a root barrier (the product manufacturer should be able to advise on this) however if it does not act as a root barrier, a separate root barrier layer will need to be installed. Other factors that will effect the choice of waterproofing layer include the environmental impact, ease of application, life expectency of the product.

Drainage Layer

In combination with the substrate, the drainage layer controls the water-retention properties of the brown roof. The most common type of drainage layer consists of plastic sheets embossed with a pattern of water-retaining cups (sometimes referred to as cupsated membranes). Holes are formed in these membranes to allow any excess water to percolate through. For most brown roof applications a drainage layer with 20mm cups such as the Oldroyd Xv20 Green Xtra shown in the diagram is specified. In unusual situations where a particularly deep substrate layer is required, a drainage layer with a larger cup size may be specified. To minimise the environmental impact of the drainage layer it is a good idea to choose a product containing a high percentage of recycled material. Single-sized aggregates can also be used to form a drainage layer but have the disadvantage of adding considerably to the weight of the roof.



Filter Layer

A geotextile filter sheet (also known as a separation layer) should be installed between the drainage layer and the brown roof substrate. This layer prevents fine particles from the susbtrate collecting in the drainage layer. It is essential to choose a filter layer that is intended for use on brown roofs as geotextile sheets designed for other applications may clog, leading to a reduction in service life.

Brown Roof Substrate

Wherever possible, the substrate will consist of soil and spoil collected from the local area. This subject is dealt with in more detail on our Brown Roof Habitats page.

In Practice

The pictures below show a brown roof being constructed using the layer build-up described above: