



EDINBURGH TRAMWAY | MURRAYFIELD STADIUM | EDINBURGH



Rugby fans will alight from the Edinburgh tramway system right outside the hallowed gates of the famous Murrayfield Stadium, home of Scottish Rugby, thanks to the advantageous properties of Leca® LWA. The tram stop is a key part of the new inner city tramway linking Edinburgh airport with the heart of the City.

GRAHAM Construction, responsible for the creation of the Murrayfield tram stop as part of the Edinburgh Trams Project, faced challenges on the project not least of all the ability to raise the structure seven metres above the existing ground level. Normal traditional fill would have imposed severe overburden threatening the stability of the existing Network Rail line and other established buildings.

Consulting engineers to this project, Parsons Brinkerhoff, determined that the replacement of traditional fills with Leca® LWA was the preferred option to overcome bearing and settlement issues associate with the soft ground conditions underlying the site. Tristan Morgan, Geotechnical Engineer at Parsons Brinkerhoff, said: “One of our main issues was to get such a large earthworks structure founded within the underlying soft ground conditions without significant ground improvement being undertaken. The light weight attributes of the Leca® LWA satisfied these criteria, with significantly lowering bearing/settlement at formation compared to traditional fills. It also interacted with the Tensar elements of the structure without difficulty.”

FACTS

Amount of material: 14000m³ of [LECA®LWA \(10-20mm\)](#)

Interesting Fact: A Tensar Geogrid wall system in conjunction with LECA® Lightweight Fill was designed and subsequently constructed to raise the ground level and form the platform surfaces

Main Contractor: GRAHAM Construction,

Contractor Feedback

A Tensar Geogrid wall system in conjunction with Leca® LWA was designed and subsequently constructed to raise the ground level and form the platform surfaces.

More than 14,000m³ of Leca® LWA was required for the Murrayfield tram stop construction which was shipped directly into the Port of Leith Docks ready to be trucked to the site as and when required.

Andrew Henry, Construction Manager GRAHAM Construction pointed out the advantages of Leca® LWA. “Faced with the complications of the Murrayfield site, especially the potential expense of excavating unsuitable ground, Leca® LWA has proved exactly the right choice of material for this technical project. Access to the platform site was difficult but Leca® LWA is a versatile and easy material to handle and this enabled us to meet the project targets.”





A totally natural product, Leca® LWA is formed by heating and firing natural glacial clay in a rotary kiln at temperatures up to 1150oC. This process transforms the clay into lightweight ceramic granules with a hard shell and porous core. With a bulk density of just 0.3 tonnes per cubic metre, Leca® LWA has excellent insulation properties, is free draining, fire resistant, frost resistant and chemically inert with no hazardous properties. Used as a lightweight aggregate fill in many civil engineering applications Leca® LWA reduces the weight on weak substrates and against retaining structures by up to 75% over traditional fill and eliminates expensive settlement delays, is easily handled and quickly installed