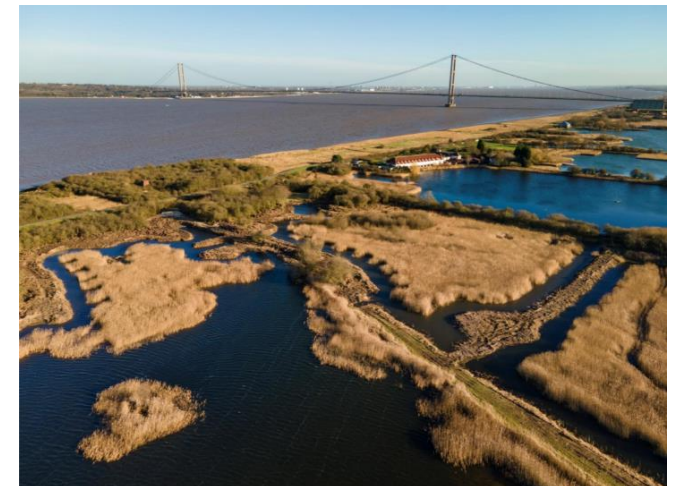


Barton to New Holland Tidal Flood Alleviation Scheme

Ground Investigations



Ground Investigation Surveys

Ground Investigation Surveys help obtain information about ground conditions to allow economic and safe designs to be developed and to reduce, as far as possible, the occurrence and impact of unforeseen conditions.

Our first phase of on-site ground investigations was carried out by our delivery partners, Jackson Civil Engineering in January 2023 and helped us understand the makeup of some sections of the existing flood embankments and underlying ground. Some of our aims were:

- To confirm site-wide ground conditions and inform options appraisal
- Confirm embankment material
- Identify suitable borrow pit material for reuse
- Fill in gaps in the available ground investigation data

What we found

Our ground investigations revealed that all embankments across the frontage are similar in structure and composition with only a few variations. They are made of mixed materials, including clay and tile! This is unsurprising given the industrial history of the area and its tile making heritage.

The ground under the tidal flats deposits (marsh land) is of low strength, this type of ground condition will dictate which options are suitable and can be progressed.



Figure 1: The project team on site using a cut down rig.



Figure 2: One of the Hydrogen Cells used to power the site.

As an organisation, the Environment Agency are committed to reducing carbon emissions and being as clean and green as possible throughout all stages of a project. Therefore, we have chosen to use hydrogen fuel cells and solar panels to provide power to our ground investigation sites.

Hydrogen fuel cells are a zero-carbon alternative to traditional diesel generators. Not only are they better for the environment, but they are also significantly quieter to run compared to diesel generators, meaning less disturbance and disruption to the community, and surrounding residential areas.



Project team conducting site walkover



Windowless Sample Borehole



Project team conducting on site meeting



Cable Percussive Borehole – Full Sized Rig



Geomat

Geomat is a light flexible material which is an alternative to traditional construction materials such as concrete and stone. Geomat is more environmentally and ecologically friendly as it reduces the erosion of embankments by allowing vegetation to grow.



Geomat photos from east of New Holland installed in early 2014