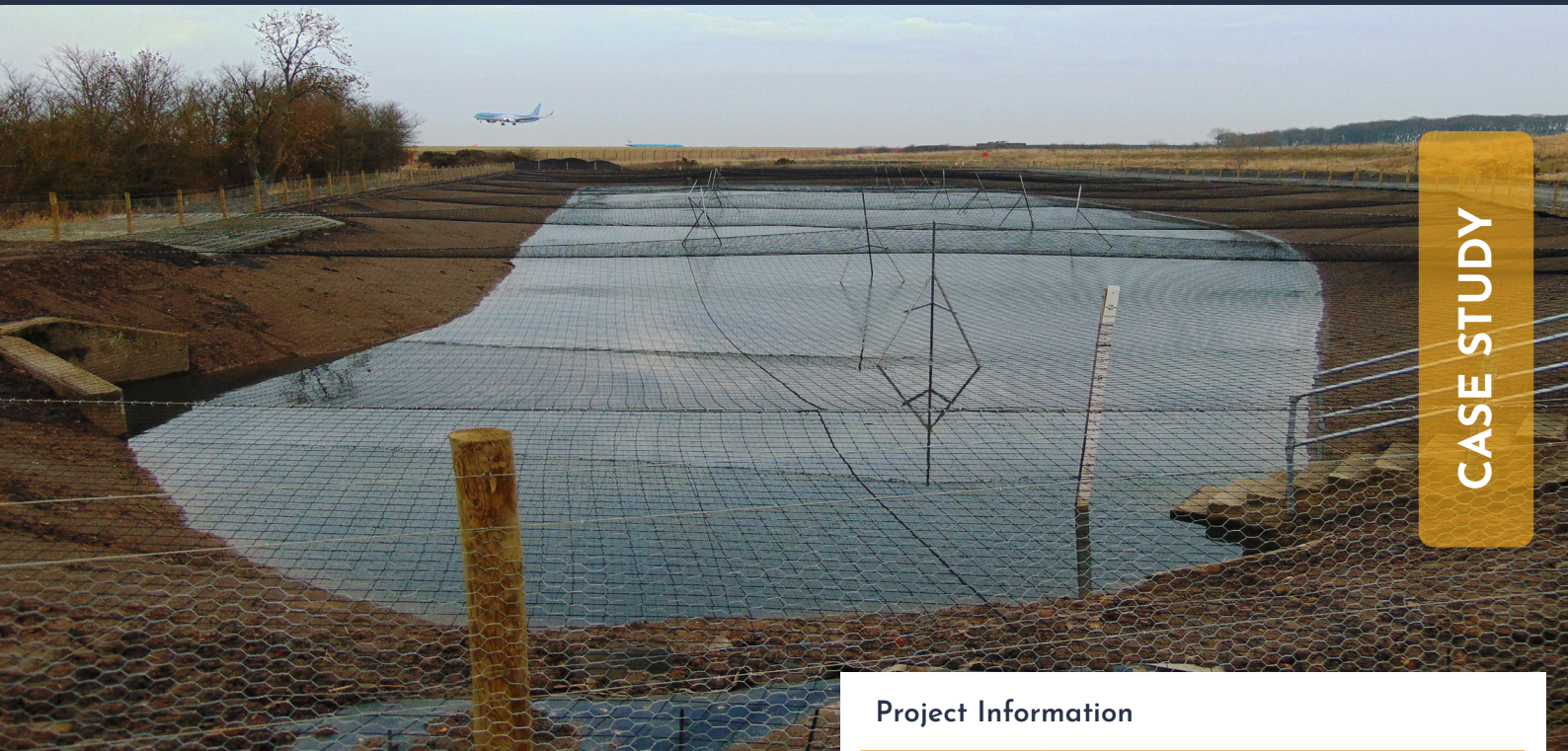


Basin Construction

Groundwater Control, Pozidrain, Newcastle International Airport, UK



CASE STUDY

Project Description

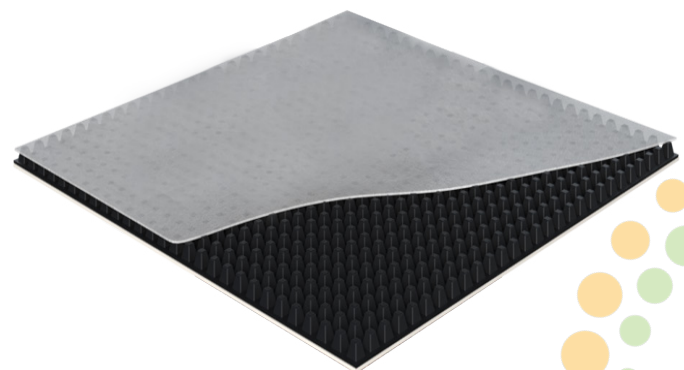
Newcastle Aero Club was founded in 1925 and is the oldest flying club in Great Britain. In 1935 it moved to what has now become Newcastle International Airport. From these humble beginnings the airport has grown to handle 5.4m passengers in 2017, and plans to increase this to 9.4m passengers by 2035 as part of the Northern Powerhouse initiative. As the airport grows and more land is developed, it is inevitable that more land will be covered by impermeable surfaces. That means the surface water run off management scheme needs to be able to handle the expected increased volume to meet planning and environmental restrictions.

The Challenge

To meet the future storage requirements the airport is increasing the capacity of existing storage lagoons, and may look to add more lagoons in the future. However in this area the water table is only 500mm below ground level in places, which means there is a significant risk of ground water pressure causing uplift of the liners. A stone layer under the liner could alleviate this, but would need a protection layer to protect the liner from the stone. Deeper excavation would be necessary to accommodate the drainage stone and achieve the required storage capacity. More excavation means an increased volume of soil disposal, as well as digging deeper into the water table which could exacerbate the problem.

Project Information

Client	Newcastle International Airport
Contractor	RHD Construction & Environmental Contractors Ltd
Products	Pozidrain 6S250D/NW8
Quantity	7,000m ²
Benefits	<ul style="list-style-type: none">• Multi-function single layer• No specialist installation tools or contractors required• Reduction in the excavation required• Efficient drainage in a thin layer



ABG Pozldrain 6S250D/NW8

ABG LTD

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The Solution

To manage groundwater, allow ground gas to escape and remove uplift pressure, **ABG Pozidrain** was used underneath the liner. Pozidrain provides more drainage capacity than a traditional 300mm stone layer, meaning all of the excavated capacity can be used for storage. Pozidrain also provides protection for the liner since it has a high resistance to puncture.

The multiple functions provided by the Pozidrain layer removed the need to import quarried stone which meant an estimated reduction of over 200 vehicles into this remote site. In turn this allowed a lower specification of access route, offering further material savings.



Pozidrain under the liner provides drainage, gas venting and puncture protection

The ABG Service

ABG's Design Department provided carbon saving calculations to support the variation and sustainability proposals, as well as installation and setting out guidance on commencement of the scheme.



Remote site meant importing material would be expensive and environmentally damaging



Remote site over 1km from nearest road, with access across fields

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