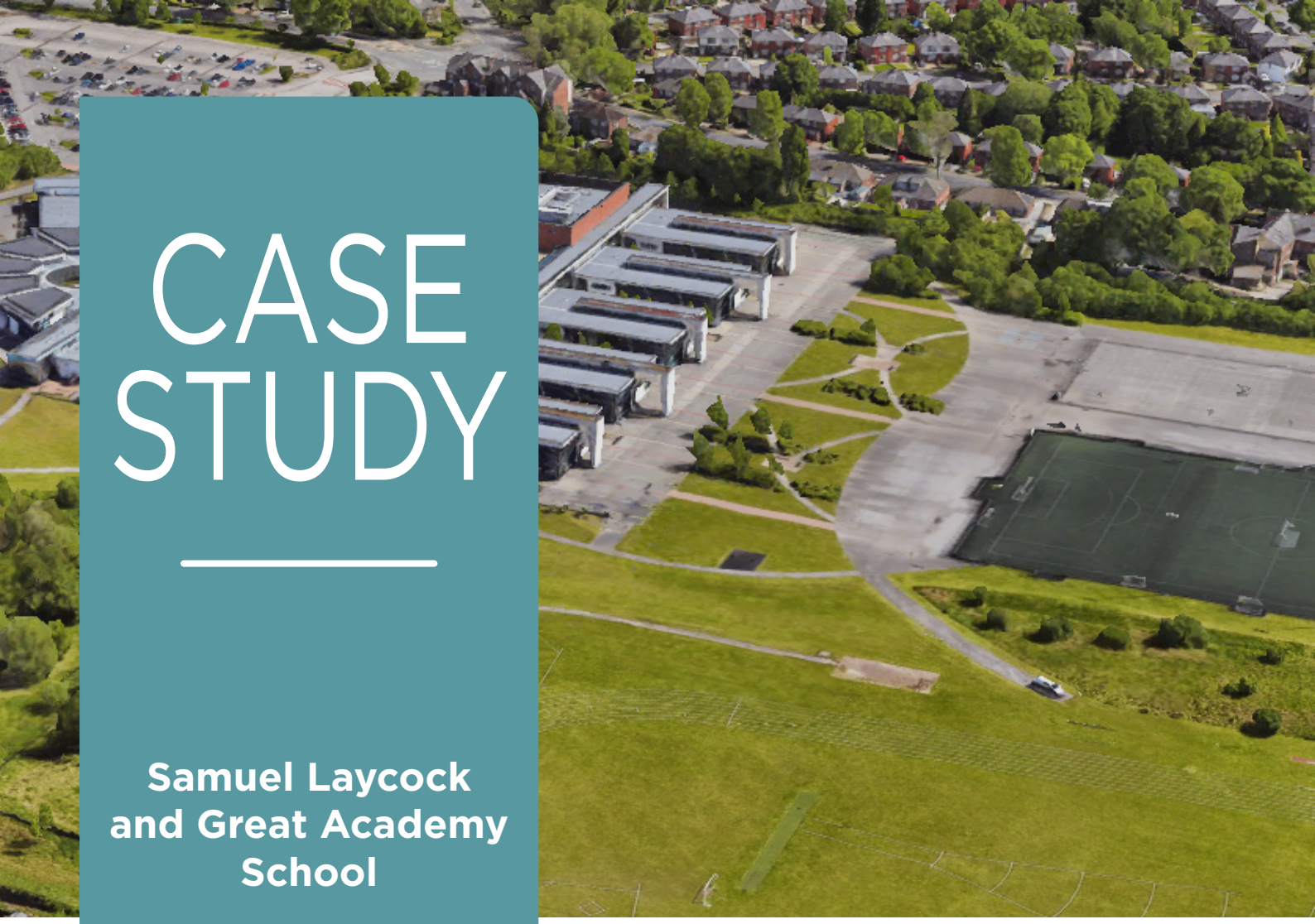

CASE STUDY

Samuel Laycock and Great Academy School

project **summary**

As part of a government funded scheme aimed at improving education facilities, EPG was appointed to fulfil a comprehensive SuDS design, implement natural flood management and ensure safety of the site through gas protection at a special needs school. Both Samuel Laycock and adjacent school, Great Academy Ashton, are located on the same site and joined by a connecting walkway.

The project lasted two years and provided cost-effective community protection to surrounding houses and the school grounds.

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the **challenges**

The schools were built on the site of a former landfill. This meant traditional drainage couldn't be implemented as digging into the contaminated land would be expensive and present health & safety issues. The landfill was actively methane generating and building a school on the landfill would present a significant risk to not only the school, but the neighbouring houses.

the **solution**

To avoid digging into the contaminated land, piping was replaced with liner attenuation tanks that simultaneously conveyed and attenuated the surface water runoff. This was a cost-effective solution that meant the tanks were more adaptable and could be placed in a flat position, whereas traditional pipes could not, keeping the dig out of the contaminated land while following a key principle of the SuDS manual -source control.

A virtual curtain was installed to provide a barrier to horizontal movement of the methane gas. By creating a preferential pathway and positive zone of influence, the ground gases were prevented from getting to the houses of the local residents. Gas membrane barriers were installed beneath the school to prevent the methane from getting into the school zones. These two systems helped to ensure the safety of students and local residents.

A management train system with source, neighbourhood and regionally controlled SuDS systems included pervious pavements, proprietary SuDs systems and a rainwater reuse and harvesting system which were factored in. This meant that a site on contaminated land with end users with special needs could still have a sustainable drainage design minimising the flood risk of the school and the local area.

the **results**

- By factoring in SuDS from the start of the project, we could ensure the most cost-effective solutions were considered. This enabled us to introduce novel and unique ways to mitigate the challenges proposed on this project.
- The schools now have a rainwater harvesting system which will save money in the long term, and the ground gas was successfully remediated and no longer poses a threat.
- Installing SuDS in schools has multiple benefits; not only managing water and improving biodiversity, but with the right engagement and conversations, SuDS can help to educate the next generation about climate change, the environment and the importance of protecting and enhancing our natural environment.

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