



CASE STUDY

Building on a Landslide

Ventnor, Isle of Wight.

THE PROJECT

To replace dilapidated Victorian housing with a three storey apartment building and basement parking designed to compliment the style of the adjacent conservation area.

THE PROBLEM

Being sited on an historic landslide the new development risked destabilising the site and wider hillside. Creating the challenge of designing a robust yet economically viable foundation solution for the development.

THE SOLUTION

By deploying state of the art analytical design methods, grounded in practical engineering, Remedy was able to come up with a robust, buildable and economically viable foundation solution.

When the developer of this desirable site realised they had to deal with the challenges of being on a large prehistoric landslide they turned to Remedy Geotechnics to unlock the site's potential.

The project involved regenerating the site to replace dilapidated Victorian housing with a new three-story apartment building together with a basement area for parking.

The site's challenge comes from the underlying regressional landslides where ground movement has been recorded and mapped over a long period of time. The geology of the wider area comprises Upper Greensand overlying Gault Clay. As the sea erodes the base of the slope the low strength Gault Clay slides downwards under gravity taking blocks of Greensand with it.

Therefore stability assessments were needed for every stage of the construction works to ensure the ground and a 5m high retaining wall supporting Zig Zag Road remained safe

and movement free.

Remedy arranged for ground investigation to be carried out to assess the local conditions, and then designed a contiguous bored pile retaining wall and bearing piles to support the basement, new structure and retaining wall supporting Zig Zag Road. The design had 53 wall piles, and 30 bearing piles of 650mm diameter taken to depths of up to 15.25m. Remedy's design was tailored to suit the piling contractor's preferred construction technique (cased rotary bored piles) which could comfortably accommodate the highly variable, and difficult ground conditions.

Early geotechnical involvement and working in partnership with all parties contributed to the successful execution of the scheme which was completed on time and within the available budget.

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