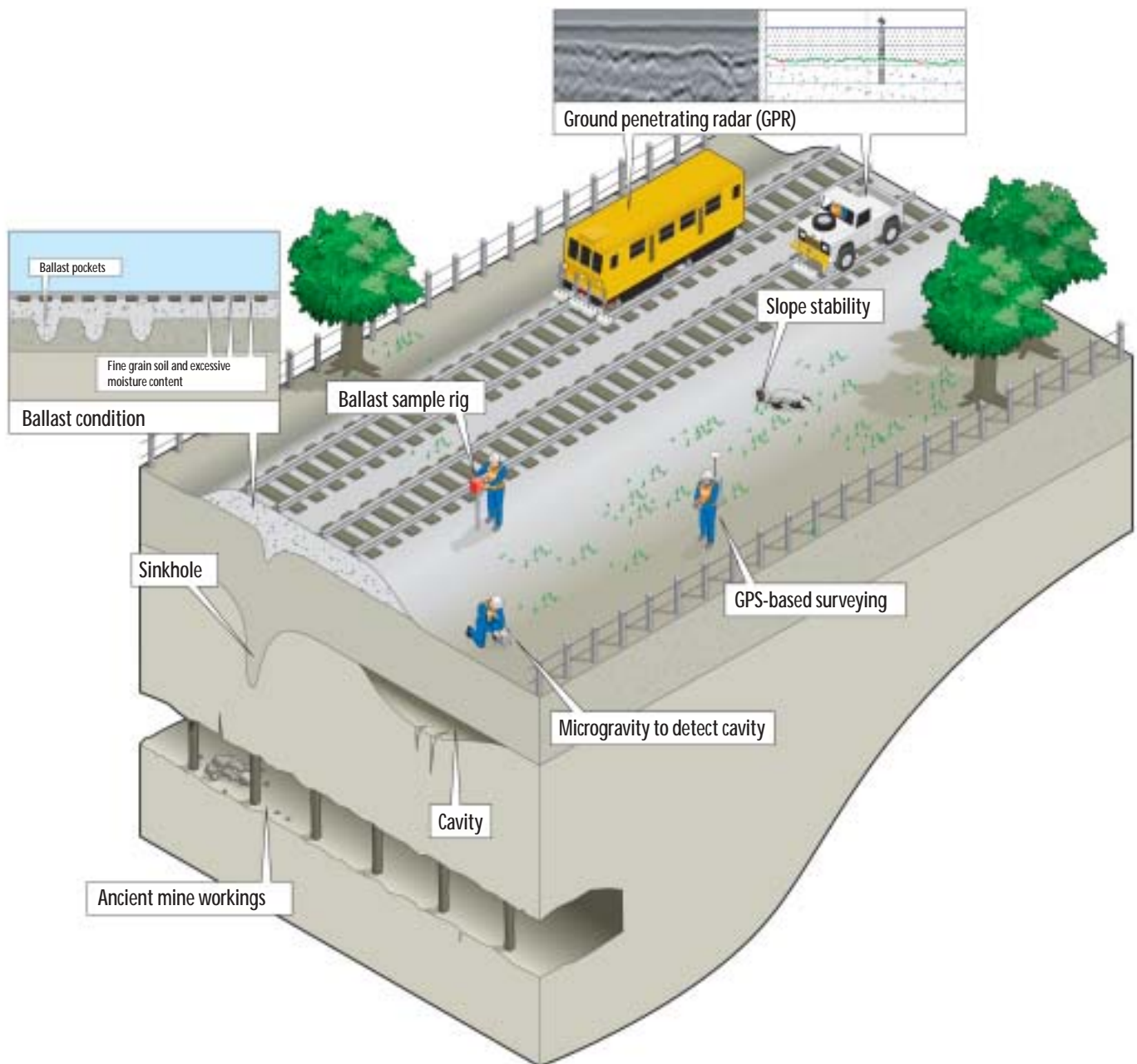


BALLAST CONDITION SURVEY

HIGH-SPEED RADAR AT MULTIPLE DEPTHS



Rail track defects are often caused by poor ballast conditions. Scanning at up to 100 mph, our total route surveys quickly identify the problems of ballast maintenance and cut the costs of renewal. Zetica scans track ballast condition at high speed using rail-mounted, multichannel GPR equipment. At lower speeds, our manual or trolley-mounted surveys provide top-quality surveys for shorter sections of track.

FINDING CAUSES, PREVENTING PROBLEMS

Variations in ballast thickness and condition cause problems for rail safety and comfort. Zetica's trackside geophysical surveys find these causes and help you to predict the problems before they occur. Uneven settlement and ballast wear accentuate themselves rapidly under changing loads and can cause sudden failure. Zetica uses GPR to

- map ballast pockets
- detect changes in ballast condition due to water content in fines and cavities
- find perched water tables within ballast and embankments
- check layering of new ballast is correct
- locate sub-ballast irregularities.

OTHER RAIL SERVICES

Zetica was established in 1991. The company now completes radar and other geophysical surveys worth £1.75 million per year, making it the leader in its field, and employs 10 degree-qualified geophysicists. Our expertise is highly focused on shallow geophysical methods applied to the rail and construction industry. Apart from ballast condition surveys, our other services relevant to the rail industry include detecting mine workings, inspecting bridge foundations, clearing unexploded ordnance and mapping geological features such as sinkholes. For example, in spring 2003, Costain-Bachy Soletanche-Skanska engaged Zetica on a major geophysical survey to reduce the risk of further sudden ground collapse above the CTRL 240 route at Stratford. The results were key evidence for the Health and Safety Executive that it was safe to restart the tunnel boring machines.



Road/rail vehicle-mounted GPR.



Helping structural surveys to detect potential causes of failure.

TOTAL ROUTE INVESTIGATION

- Ballast condition GPR surveys
- Ballast sampling
- Cavity detection
- Slope stability studies
- Utility mapping
- Cone penetration test soil profiling
- Non-destructive testing (NDT)



Zetica is a Link-up registered/qualified supplier with a recognised standard throughout the UK rail industry.



zetica

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