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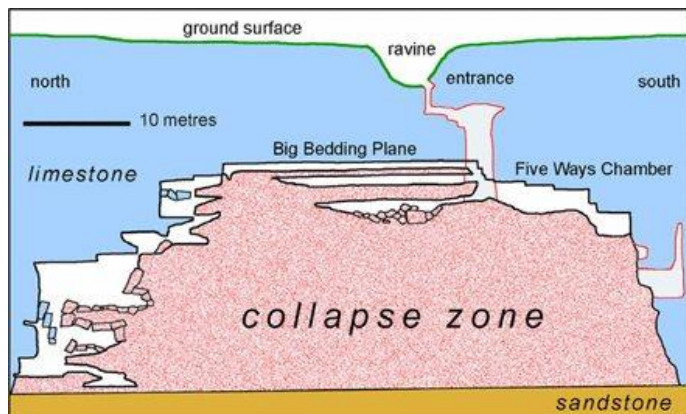
North West Regional Group Meeting

Thursday 8th December 2016

Control the Drainage: the Gospel Accorded to Sinkholes by Dr Tony Waltham

This lecture is an abridged version of the 2015 Glossop Lecture that was presented to the Engineering Group of the Geological Society by Dr Tony Waltham.

Tony will give a presentation based upon his 2015 lecture and the subsequent paper published in the Quarterly Journal of Engineering Geology and Hydrogeology. This work intends to further some of the explanations of karst processes, and to shed some more light on the world of limestone. By exploring this topic in detail it is hoped that the nature of karst as a geo-hazard becomes better understood, paving the way to reduce this hazard where it impacts on construction projects. Having visited engineering projects taking place on karst in many parts of the world, Tony has been made aware of how little is known by many civil engineers about karst, cavernous ground and sinkhole hazards.



Karst is a landscape that is distinguished by underground drainage normally formed on limestone or gypsum. Its impact on engineering geology is the distinctive suite of karst geohazards, which are largely related to holes in the ground of varying size and unpredictable nature.

The most widespread and frequent geohazard is the development of new sinkholes within the soil profile over a cavernous limestone developing by suffosion. New suffosion sinkholes are nearly all formed by rainstorms, new drainage inputs or water table decline; they are therefore largely avoidable if the gospel of drainage control is obeyed.

Rock collapse developing new sinkholes represents a further geohazard. Most sinkholes in soil and most collapses on rock are induced, wholly or partially, by civil engineering activities, and are therefore also largely avoidable.

The lecture addresses the challenges related to karst using examples from around the world and clearly illustrates that drainage control is the golden rule in karst.



Dr Tony Waltham is a geologist who graduated from Imperial College, London, and studied in the mines of Norway for his PhD. He was then a university lecturer for many years in Nottingham, where he taught mining and civil engineering, and pursued research into ground stability and geohazards.

Travel to faraway places has always taken all his free time, and his geological interest has taken him all over the world, notably to almost every country in Asia. In his younger days, cave exploration was a major delight, taking him on expeditions to caves in many countries, to the Himalayas of both Nepal and Tibet, and then to the great limestone lands of China.

Author of more than a dozen academic books and innumerable scientific papers, he now enjoys taking his own photographs for books and lectures for a wider audience. He has taken geology tours to Jordan, Alaska, Kamchatka and elsewhere, has made films for television, still manages his Geophotos picture library and is on the Editorial Board of *Geology Today*. He has always loved the great outdoors, and still travels extensively – always with his wife, Jan, who appears as scale on many of his photos.

CPD: These events may be considered for contributing to a recognised Continuing professional Development (CPD) scheme as part of personal development. Delegates should check their individual scheme requirements.

Coffee from 6.00pm. Lecture starts at 6.30pm

**Venue: The Centre Birchwood Park, Warrington ,
WA3 6YN Tel: 01925 282 940**

<http://www.thecentreatbirchwoodpark.co.uk/location.aspx>

Organised by the North West Regional Group of the Geological Society of London

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