



The
Geological
Society

North West Regional Group

Newsletter

Autumn 2017



Your guide to Geological Society events in the North West - 2017/18

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COMMITTEE NEWS

We welcome you back to the regional group for a new season of lectures and fieldtrips. The current status of the committee is:

Chair: Nik Reynolds
Secretary: Catherine Kenny
Treasurer: Rob Hunt
Outreach Officer: Katherine Harrison

Committee members:

Marie Convery	Laurance Donnelly
Martin Lucas	Andrew Moore
Mark Parkin	Laura Ward

The AGM will be held in January just before our January lecture, so if you would like to join the committee or have any ideas for events, trips and lectures then please come and have your say!

The photograph used on the cover of this year's newsletter is from the field trip to Mam Tor.

LOOKING BACK AT 2016/17

We hope you all enjoyed our previous season of activities. Highlights of our events last year include:

- 4th Joint Regional Group Photo Competition
- School's Challenge
- Joint Lectures with NWGA and ICE
- Alderley Edge Field Trips
- Trip to National Coal Mining Museum
- Trip to Mam Tor Landslide

Photographic Competition

What a fantastic response to the photo competition! The committee very much enjoyed going through all the pictures, there were some really great entries and we even ended up with a winner from the NW region in the age 16-18 category! Here's the winning photos:



Winning photos from Peter Clough

Recon you can do better? Well, great news is the 5th Joint Regional Photographic Competition will be launched soon and there's some great cash prizes, Special Publications and more to be won in two categories celebrating the Geological Society's 2017 "Year of Risk":

Category 1:

Entry Level: Full-Time Education; ages 11+ to PHD level

Title: **"Earth: Gneiss, Tuff and a bit Wacke"**

Category 2:

Entry Level: Professional; ages 16 and up

Title: **"Danger: Geologists at Work (Schist Happens!)"**

Keep an eye out for the emails!! More details will also be available soon on www.geolsoc.org.uk/JointPhotoComp

School's Challenge

The Geological Society's School's Challenge Competition encourages teams of science, geography and geology students to produce a themed poster, and then develop a 5 minute presentation on their chosen (geology related) topic to a panel of geologists from academia and industry. The teams then compete in a geological quiz, set by Burlington House. The Challenge is aimed at years 12/13 (age 16-18).

Once again, Altrincham Grammar School for Boys (AGSB) hosted the NW Regional Heats of the School's Challenge, having won both the 2016 Regional Heat, and the 2016 Final of the competition at Burlington House! The boys presented on "The Geology of Venus" to a very impressive standard.

This year, AGBS were again only opposed by one team, this time from Bury Grammar School for Girls, with previous participants, South Cheshire College, indisposed

due to exams! Bury Grammar fielded a strong team of geography students who delivered a very professional presentation and poster on Vesuvius.



Bury Grammar School For Girls



Altrincham Grammar School For Boys



Judges

It was the quiz that finally defeated the girls, with AGSB winning the regional heat for the third year in a row! The boys went on to win the Judge's Poster Award at the Finals in Burlington House, so an absolutely brilliant result for the North West!

We wish to thank both schools for excellent presentations and a good evening for the regional heats! Many thanks

also to our judges, Marie Convery and Andy Moore, from the NWRG Committee, and to Professor Mike Burton from Manchester University.

As our regional winners, Altrincham Grammar School for Boys will host the 2018 event. **We are now looking for schools to take part in this challenge.** The title of the talk is open to the schools, although it may be prudent to note that 2018 will be the 'Year of Risk'! We anticipate that the date for the regional heat will be in February, although we will confirm this in due course. More information can be found on: <https://www.geolsoc.org.uk/geochallenge>

Field Trips

Three field events were held this year with visits to The National Coal Mining Museum in Wakefield, Alderley Edge, and the Mam Tor Landslide.

In February, 33 of us visited the National Coal Mining Museum in Wakefield for a specially arranged tour of the drift mine, with another 12 of us (including children) taking part in the standard tour. What an excellent visit! So interesting to be able to see so many of the mining features encountered in exploration fieldwork "in situ".



National Coal Mining Museum Trip

The Alderley Edge field visit in May comprised a trip into West Mine, the largest of the mines on Alderley Edge. Due to the nature of the trip, spaces were limited to only 8 people per trip, and we were fortunate that the Derbyshire Caving Club (DCC) offered to take us in three separate groups! As a result, 24 of us were able to enjoy this exciting underground space, and closely examine the stunning copper mineralisation.

We saw faults, slickensides, underground lakes, underground bacteria, malachite, fossils, and even some sandcastles! Many thanks to the DCC.



Your Reviews of the trip:

"An interesting deposit model, quite different to African sediment hosted copper I have looked at and certainly food for thought, a very useful and informative trip". James Tennant

"Fantastic trip! Very interesting geology explained brilliantly in-situ by Anton from the DCC." Robert Crookes

'You lot got so excited looking at a mineral!' A. Teenager



Mineralisation in West Mine



Lionhead Rock (by Robert Crookes)

In September, 30 of us visited the Mam Tor landslide near Castleton, Derbyshire. The features of the ruined road were viewed through the expert eye of Professor Ernie Rutter from Manchester University, with some added expertise from Laurance Donnelly. What a fantastic trip! We saw en-echelon faulting, sedimentary basin models, sedimentary structures and the weather was kind to us! We even had entertainment provided by a kamikaze cyclist....



Trip #1



Backwards-rotated fault complex



Green Underground River (by Robert Crookes)



Examining boulders of the Mam Tor Sandstone



Prof. Rutter and the Mam Tor Headscarp (By John Naylor)

After the landslide tour, 21 of us descended 100m into the Blue John mine down 240 steps. Well worth it to see the rare Blue John fluorospar in situ, and all the fascinating features of these glacial meltwater-swirled caverns.



100m down inside the Blue John Mine (By John Naylor)



Blue John (By John Naylor)



Descending the steps

Lecture Series 2015/16

We kicked off the 2016/17 season with Dr Andrew Howard of the British Geological Survey (BGS) presenting "Britain Geology and Surveying in a Modern BGS".

John Black presented our October lecture at Manchester University on "The Borrowdale Volcanic Group as a Potential Host Rock Beneath West Cumbria: Did Nirex Undersell it 20 Years Ago?".

Our joint meeting with the North Wales Geological Association in November was with Steve Parry on "Assessing the Hazards of low frequency, high magnitude landslide events; the role of the engineering geologist".

Also in November, Jim Richards presented a lecture on his autobiography: "Gold Rush: Prospecting and Small Scale Mining for Gold and Diamonds". You can read a review of his book here:

<https://www.geolsoc.org.uk/Geoscientist/Books-Arts/Geoscientist-book-reviews-online/2017-Book-reviews/Richards-Jim>



Our Christmas lecture at the Centre in Birchwood was given by Dr Tony Waltham, a reprise of a Glossop Award winning lecture on Sinkholes.

In January, we welcomed Malcolm Henderson to the Pied Bull in Newton-Le-Willows for sandwiches, chips and "Compaction and How It Works" which is the first of what we hope will be a series of lectures aimed at early career geologists where local experts share their long experience of particular topics. **If you want to volunteer a lecture in a similar vein for our 2018/19 season please contact geologicalsociety.northwest@gmail.com!**

February is our traditional month for the joint lecture with the Liverpool Geological Society, which didn't go to plan this year (issue resolved for 2018!), instead we had 2 lectures in March.

In March, Athena Livesey presented "The A1 Widening Scheme, Tyneside" at The Pied Bull and Professor Cynthia Burek presented "Prominent Female Pioneers in Geology: Role Models for Today's Geologists" at Chester University, rescheduled from last year when prof. Burek was unfortunately unwell.

In April, our joint event with the West Midlands ICE Group was held at Keele University: "Monitoring Construction Work: Lessons Learned and practical Guidance" from Peter Hewitt of Laing O'Rourke.

In May, the president of the Geological Society, Malcolm Brown, visited our region at Liverpool University to deliver his lecture "Risk and Uncertainty in Exploration for Oil and Gas".

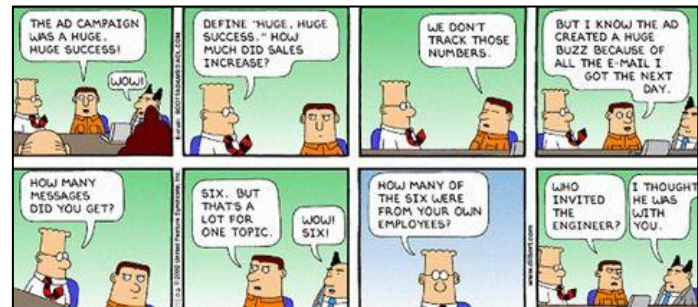
Our final lecture of the season at the end of May was from Eleanor Walker of Atkins on "Development of Generic Assessment Criteria for Assessing Vapour Risks to Human Health from Volatile Contaminants in Groundwater" and although the region was somewhat reeling from the events in Manchester three days previously, the lecture was well attended.

Average attendance at lectures 2015/16 was 35, with a maximum of 55. As our regional membership mailing list is about 740, this equates to around 4%. This makes our attendance sound poor, and that we should perhaps be "doing something" to address this. This is the traditional way of assessing the engagement of a regional group, and there was an article in *Geoscientist* last year (<https://www.geolsoc.org.uk/Geoscientist/Archive/July-2016/What-is-the-point-of-Regional-Groups>) discussing regional group attendance in the East Midlands based on this same statistical method.

However, statistics is a dark art, and I would argue that a percentage of a whole mailing list is not a good way of assessing the engagement or level of activity of a regional

group. Of course, we are always looking for ways to improve our attendance, as we absolutely should be, and we try to ensure that the mailing list is up to date, but the simple truth is that many people will never, ever attend lectures or events, no matter what, and "doing something" to make this group of people change their minds is a total waste of efforts. People are on the mailing list for a huge variety of reasons, and obtaining information about our regional group's lectures with a view to attending them is only one of those reasons.

Is there a better way to assess if we are doing a good job? If we were to analyse the number of communications we receive, for example, we get lots of those from you, and the field trips are always oversubscribed. If you ask the 35-40 people at a typical lecture if it was worthwhile, they say yes. And I personally will take 40 enthusiastic people over 700 apathetic ones any day of the week.



We put on lectures for all of our members, as well as any willing member of the public, and we try to please the majority where possible as this allows us to request for funds to put these talks on. There are few things free these days, and our talks at the moment are one of those.

Many of the talks presented last season would usually have a high ticket value when presented as part of a conference, and it is an ideal opportunity to hear the speaker, to gain up to date information of the subject, to learn new subjects, and to gain CPD points as well as to network and meet your peers.

Come along, you might enjoy it!

WHAT'S HAPPENING IN 2017/18

Lecture Series 2017/18

14 September 2017

Sub Surface Risks for the Construction of the High Speed 2 (HS2) Rail Link in Mid-Cheshire.
by Chris Eccles, (at Birchwood)

The geological conditions in mid-Cheshire combined with the anthropogenic legacy will have significant effects on



the design the proposed HS2 Phase 2B high speed railway line in mid-Cheshire.

This 20 km long section of the HS2 route passes through gently undulating farm land and includes structures crossing over a number of A-roads, canals and two minor railway lines. In many areas of lowland UK this would involve routine ground engineering risks. However, this part of the HS2 route will be technically challenging for design and construction due to the presence of deep salt karst and several hundred years of human impact on the ground.

In November 2016, HS2 announced a change in both the horizontal and vertical alignments through Cheshire due to the ground related risks.

This talk will describe the geology and the significant risks associated with constructing HS2 over both natural hazards such as collapsed ground in the soluble rocks and the anthropogenic hazards including conventionally mined and solution mined ground. Geotechnical solutions required to mitigate the risks will be outlined.

Chris Eccles has over 30 years' experience working as an Engineering Geologist and Geotechnical Engineer. He is a Chartered Geologist and a UK Registered Ground Engineering Adviser (RoGEP Adviser). He is also a former Vice President of the Geological Society. Chris is a Director of TerraConsult Ltd and has a wide range of skills gained from working within the contracting and consulting sectors.

In his early career Chris worked on and then supervised a range of multi-million pound site investigations such as those for the Jubilee Line Extension plus a range of road and rail projects. He now leads a team carrying out a wide range of geotechnical and environmental investigations, brownfield land assessments and ground engineering design. Chris has also acted as an expert witness.

19 October 2017

The Basics of Soil Slope Stability

By Bob Seedhouse (at Manchester University)

Major earthworks have been constructed since prehistoric times, but only within the last 100 years have reliable methods been developed to predict the stability of natural and artificial slopes, and our knowledge of soil slope stability is still developing.

Techniques of slope stability analysis, such as computer based 'slip circle analysis' will be familiar to most geotechnical practitioners, but understanding of the fundamental basis of soil behaviour of real soils can have a substantial effect on selection of parameters and ground models, and the reliability of the resulting designs.

The presentation will get back to the basics of soil behaviour and how this impacts on slope stability analysis, and how geological history and pre-failure behaviour of the ground can have surprising consequences.

Bob will present a practical engineer's view of the basis of slope stability analysis and design.

Bob Seedhouse is a chartered civil engineer and currently Technical Director for WSP UK Ltd based in Manchester, with responsibility for technical direction of geotechnical teams in the Midlands, North of England, Scotland and Northern Ireland.

He has some 39 years' experience in the industry with contractors, consultants and local authority, principally as a geotechnical specialist. He has extensive experience of design and construction of earthworks and stabilisation of landslides and earthworks failures throughout the United Kingdom, and has also acted as an expert witness in construction disputes including earthworks failures.

30 November 2017

Forensic Geoscience Group: The First Decade

By Dr Laurance Donnelly (at Manchester University)

The Forensic Geoscience Group (FGG) was established in December 2006 by Dr Laurance Donnelly, who served as its first Chair (2006-2011). The lecture will build on the article in Geoscientist last year

<https://www.geolsoc.org.uk/Geoscientist/Archive/December/January-2016-17/Forensic-Geoscience-Group-the-first-decade>.

Forensic Geology is the application of geology to criminal investigations. Forensic geologists may assist the police in some types of crimes to help determine *what* happened, *where* and *when* it occurred, or to help search for homicide graves or other objects buried in the ground. Forensic geologists may support the police by providing the analysis of geological (trace) evidence or by conducting ground searches for burials. Geological (trace) evidence involves the collection, analysis, interpretation, presentation and explanation of geological evidence. Geological evidence can vary considerably and may include for example; rock fragments, soils and sediments, which occur naturally on the ground, artificial



(anthropogenic) man-made materials derived from geological raw materials (such as bricks, concrete, glass or plaster board), or micro-fossils. These may be transferred onto a body, person or the clothing of a victim or offender. This evidence may then be used to see if there could be an association between different items or objects. Geologists' may also help the police search for locating (and sometimes the recovery of) objects buried in the ground, including for example; homicide graves, mass graves related to genocide, weapons, firearms, improvised devices, explosives, drugs, stolen items, money, coinage and jewellery. In the past ten years or so there have been at least 30 international meeting on forensic geology, five text books have been published and numerous technical papers and articles. Together, these all demonstrate the wealth in activity and interest in forensic geology in the UK and world-wide. This lectures provides a general overview of the history and recent developments in forensic geology and how geologists' have supported the Police with certain types of crimes including; rapes, murders, robbery, terrorism and the search for graves, weapon, money & drugs. It draws on operational case experiences and provides information on the logistical aspects of working with the Police.

Dr Laurance Donnelly is a professional, chartered geologist, with a First Class Honours Degree in Applied Geology & Mineral Exploration and a PhD in Engineering Geology & Geohazards. He has 25 years' experience throughout the UK and world-wide in the fields of; mineral exploration, mining, mining, engineering geology, mining hazards and geohazards. He currently is employed as Chief Geologist with WorleyParsons Consulting and previously worked with Wardell Armstrong International, Halcrow, International Mining Consultants and the British Geological Survey. For the past 20 years he has worked on numerous high-profile cases advising the Police as a forensic geologist. In 2002, he was invited to Westminster Palace, Houses of Parliament, to give a presentation on Forensic Geology and the Moors Murders. In 2006, he established the Forensic Geoscience Group (FGG), of the Geological Society of London and served as its first Chair. In 2010, the International Union of Geological Sciences invited him to establish an International Work Group on Forensic Geology, which has evolved into the IUGS Initiative on Forensic Geology (IUGS-IFG), where he serves as the Chair. He has been working in close collaboration with 'The Body Farm' (FBI Facility) in Tennessee, USA, to better understand the impact of human decomposition on geology. Currently is registered as and Expert Adviser to the National Crime Agency (NCA)) and acts as a geological adviser for the Police. He has approximately 200 publications, including peer reviewed papers,

conference papers, magazine articles, public reports, and one book. Globally he continues to promote and pioneer the applications of Forensic Geology. He is the recipient of awards for outstanding contributions to geology from the Institution of Mining & Metallurgy, Geological Society of London, Geological Society of America and Russian Federal Centre of Forensic Science at the Ministry of Justice of Russia, in Moscow.

14 December 2017

Assessing Asbestos in Soil - What constitutes best practice?

By Andrew Moore (at Manchester University)

Andrew will present on developments in the assessment of risk associated with asbestos in soils on development sites. Industry guidance has been consolidated in the CIRIA C733 document in 2014 and more guidance has followed most notably in the form of CAR-SOIL in 2016.

Why does asbestos require such focus that other contaminants require? Andrew will set asbestos in context and then through reference to guidance, evolving case law and practical site examples examine what best practice looks like. This includes challenges around designing soil sampling strategies, protecting our field professionals and advising clients on their options and responsibilities when taking a site through to remediation and construction.

Andrew Moore is a chartered geologist and civil engineer and currently Technical Director for WSP UK Ltd based in Manchester, with responsibility for technical direction of Ground Risk teams across the UK.

He has some 28 years' experience in the industry with contractors, consultants and the Environment Agency. Recently Andrew has contributed to industry guidance and acted as expert witness in contractual disputes and planning inquiries, principally as a contaminated land specialist. Andrew leads within WSP on internal training and advice to clients relating to asbestos in soil working closely with internal asbestos specialists.

January 2018 (Date TBC)

Satellite InSAR for Mining Related Risk Assessment: A Case Study from Manchester

Based on the paper by Keith Nichols, Adam Thomas and Rachel Holley (at Manchester University)

Details to follow.



20 February 2018

Climate Change and Lake Sediments

By Prof Richard Chiverrell (at Liverpool University) -
Joint Lecture with the Liverpool Geological Association
Details to follow.

March 2018 (Date TBC)

Wylfa

By Rob Hunt (at Chester University)- joint lecture with
the North Wales Geological Association
Details to follow.

April 2018 (Date TBC)

Geology and Beer

By Rick Brassington (at University of Keele)
Details to follow.

May 2018 (Date TBC)

Whitemoss Landfill Mine Shaft Remediation

By Mark Parkin (at The Pied Bull)
Details to follow.

Field Trips 2017/18

Field day excursions will be run in May 2018, venue TBC.

Earth Science Week



We will be hosting a Geowalk of Chester with Professor Cynthia Burek of Chester University as part of the Geological Society's Earth Science Week.

<https://www.geolsoc.org.uk/earthscienceweek>

A-Level Revision Event, Schools Challenge and Early Career Award

Our third A-Level Revision event will be in February at Manchester University, with university style lectures from our local experts on subjects taken from the A level Geology and Physical Geography curriculum. This event is to allow A level students in the area to experience a university style lecture and to assist with "tricky" subjects from the curriculum.

We hope to run the School's Challenge event on the same day.

Last year, we had no entrants for the Early Career Award. This competition is open to all Fellows with less than 10 years post graduate experience, who are working towards Chartership. If you'd like to apply, contact geologicalsociety.northwest@gmail.com. More details are at: <https://www.geolsoc.org.uk/earlycareeraward>.

Chartership Meeting

In March, we will host a short lecture on the new CPD scheme, following which Stephen Fryer will present a workshop on the benefits of chartership and how to become chartered.

Details to follow.

It should be noted that there may be reasons why our events change. This may be associated with problems with a speaker or venue which cannot be avoided. We will aim to have fliers issued a month before each event, and will keep our members informed about any variations to programme to the best of our ability.



The North West Regional Group is YOUR society - If you have any comments or questions, or you have a brilliant idea for a lecture or field trip that you would like us to organise, or if you could offer to lead a field trip, then please feel free to make contact using geologicalsociety.northwest@gmail.com

We wish to thank again all the speakers who made our programme last year and hope you enjoy the programme for the up and coming year.

Best regards to you all on behalf of the Committee.

Catherine Kenny
Secretary, North West Regional Group of the Geological Society of London





The
Geological
Society

servicing science & profession

North West Regional Group
Newsletter, Autumn 2017

Social Media

We have an active Facebook webpage which we encourage you to visit. We're also on Twitter! We try and keep these sites up to date with information regarding meetings and other relevant interesting geological bits and bobs we find!!!



Our Friends in the North West

Manchester Geological Association
www.mangeolassoc.org.uk

Liverpool Geological Society
<http://www.liverpoolgeologicalsociety.org/>

North Wales Geology Association
<http://www.ampyx.org.uk/cdgc/cdgc.html>

North West Branch of the Open University Geological Society
<http://ougs.org/northwest/>

University of Manchester, School of Earth and Environmental Sciences
www.seaes.manchester.ac.uk

University of Liverpool, Department of Earth and Ocean Sciences
<https://www.liverpool.ac.uk/earth-ocean-and-ecological-sciences/events/>

University of Liverpool: Herdman Society
<https://www.liverpool.ac.uk/environmental-sciences/welcome/theherdmansociety/>

North Staffordshire Group of the Geological Association
<http://www.esci.keele.ac.uk/nsgga/index.html>

Institution of Civil Engineers North West
<https://www.ice.org.uk/about-ice/near-you/uk/north-west>

Venue Information

Manchester University: Williamson Building, Oxford Road, Manchester M13 9PL
<http://www.manchester.ac.uk/discover/maps/> This building is situated opposite the Manchester Museum. Go up the steps from Oxford Road, the lecture theatre is the first room on the left.

Birchwood Centre, Birchwood Park, Warrington WA3 6YN
<http://www.thecentreatbirchwoodpark.co.uk/location.aspx>

Chester University: ParkGate Road Campus: Beswick Lecture Theatre, Chester University, Chester CH1 4BJ
<http://www.chester.ac.uk/find-us>

Keele University WS0.06 in the William Smith Building of Keele University ST5 5BG (Building 15 on campus map
<https://www.keele.ac.uk/kudis/keelecampusmap/>
<https://goo.gl/maps/iyJwnr2nxNG2>
Car parking is free on campus after 5:30pm.

The Pied Bull: The Pied Bull, 54 High Street, Newton-le-Willows, Merseyside, WA12 9SH
<http://www.piedbull.com/findus.html>

Liverpool University: Lecture Theatre 137 of Liverpool John Moores University, Byrom Street L3 3AF. See <http://www.liverpoolgeologicalsociety.org/meetings.htm> Go in the main entrance - up to the first floor - and all the way along the corridors towards the James Parsons Tower. At the end of the corridor is the Lecture Theatre (LECTURES AT LIVERPOOL ALL START AT 7.30PM)



Programme for 2017/18

All lectures start at 6.30pm except at Liverpool University, which starts at 7.30pm

Date	Group	Venue	Event	Speaker
14/09/17	NWGS	The Centre, Birchwood	Sub Surface Risks for the Construction of the High Speed 2 (HS2) Rail Link in Mid-Cheshire	Chris Eccles
14/10/17	NWGS	Chester City Centre	Earth Science Week Geowalk: Chester	Cynthia Burek
19/10/17	NWGS	Manchester University	The Basics of Soil Slope Stability	Bob Seedhouse
30/11/17	NWGS	Manchester University	Forensic geoscience group: The First Decade	Laurance Donnelly
14/12/17	NWGS	Manchester University	Assessing Asbestos in Soils - What Constitutes Best Practice?	Andy Moore
Jan 2018	NWGS	Manchester University	Satellite InSAR for Mining Related Risk Assessment: A Case Study from Manchester	TBC
20/02/18	NWGS/ LGS	Liverpool University	Climate Change and Lake Sediments	Richard Chiverrell
Feb 2018	NWGS	Liverpool University (TBC)	A level Revision Event, Careers Event and Schools Challenge	TBC
Mar 2018	NWGS/ NWGA	Chester University	Wylfa	Rob Hunt
Mar 2018	NWGS	Manchester University	Chartership Meeting and CPD lecture	Steven Fryer, Chris Eccles and Bill Gaskarth (TBC)
Apr 2018	NWGS / TBC	Keele University	Geology and Beer	Rick Brassington
May 2018	NWGS	The Pied Bull, Newton-Le-Willows	Whitemoss Landfill Mine Shaft Remediation	Mark Parkin
May 2018	NWGS	TBC	Field Trip	

NWGS – Northwest regional group of the Geological Society of London

NWGA – North Wales Geology Association

ICE – Institute of Civil Engineers

LGS- Liverpool Geological Society