



The
Geological
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Abstract Book

RESPONSIBLE INVESTING in Natural Resources

7th – 8th October 2019

The Geological Society of London, Burlington House



Conveners

Sarah Gordon (Satarla/Geological Society)

David Bamford (Petromall)

Christopher Reeves (Digby Wells)

Aldo Peninni (Satarla)

Ellen Casey (Satarla)

Nic Bilham (Camborne School of Mines/University of Exeter Business School)

Keiran Doyle (Camborne School of Mines/University of Exeter)

WELCOME TO THE CONFERENCE

INTRODUCTION

What is responsible investing, how should we measure it and how can we shape its future?

These are some of the questions that investors, operators, policy makers and NGOs will challenge and answer during this two-day conference.

Responsible investment is currently driven primarily by the volume of carbon an organisation releases to the environment. This blanket approach can have unintended consequences for the extractives sectors and their customers, as well as for places and communities affected by their activities.

Responsible investment should encompass a broader and more balanced set of requirements, such as those represented by the UN Sustainable Development Goals, thereby ensuring that those organisations who truly strive to operate in a more sustainable manner are actively supported by responsible investors.

We are very pleased that you are able to join us to seek to answer these important questions and help define the future of responsibility and sustainability in the extractive industries from an investor perspective.



CONFERENCE PROGRAMME

Monday 7 th October 2019	
08.30	Registration and networking (tea & coffee)
09.30	Conference welcome and introduction Richard Hughes, <i>The Geological Society London</i>
09.40	Welcome to Responsible Investing conference: Scene setter Sarah Gordon, Christopher Reeves & David Bamford
	THEME: Is good environmental and social governance (ESG) now just good business?
09.50	Karina Litvack, <i>Non-Executive Board Director</i>
10:20	Tom Albanese, <i>former CEO, Vedanta Resources</i>
10.50	Tea & coffee break
	THEME: What does 'responsibility' in extractive industries mean?
11.10	Jon Samuel, <i>Anglo American</i>
11.30	Michael Barron, <i>Michael Barron Consulting</i>
11.50	Becci Collacott, <i>IPIECA</i>
12.10	Frances Wall, <i>Camborne School of Mines, University of Exeter</i>
12.30	Lunch
	THEME: What are responsible investors looking for?
13:20	James Fryer, <i>CNA Hardy / Mining Insurance Group</i>
13:40	Carole Cable, <i>Women in Mining</i>
14:00	Claudia Jukes and Jonny Page, <i>Cyan Finance</i>
14:20	Instructions for breakout session
14:30	Tea & coffee break
15.00	BREAKOUT SESSIONS: What is responsible investing? Group 1 led by: Andrew Bloodworth, <i>British Geological Survey</i> Group 2 led by: Sarah Scott, <i>Environment Agency</i> Group 3 led by: Marion Maloney, <i>Environment Agency</i> Group 4 led by: Joel Gill, <i>Geology for Global Development</i> Group 5 led by: Keiran Doyle, <i>Camborne School of Mines</i>
16:30	Feedback and summary of breakout groups
17.30	End of day one

Responsible Investment in Natural Resources

Tuesday 8 th October 2019	
08:30	Tea & coffee
09:00	Welcome Address and recap on yesterday Sarah Gordon, Christopher Reeves & David Bamford
	THEME: Framing stewardship in extractive industries
09:10	Aidan Davy, <i>ICMM</i>
09:40	Catherine Howarth, <i>ShareAction</i>
10:10	Tea & coffee break
	THEME: What data matters
10:30	Kat Bruce, <i>NatureMetrics</i>
10:50	Zak Wood / Aiden Choles, <i>DBK Advisory</i>
11:10	Pierre Courtemanche, <i>GeoTraceability</i>
11:30	Gareth Morgan, <i>Terrabotics</i>
11:50	Robert Pell, <i>Minviro</i>
	THEME: Do we need new leadership capabilities?
12:10	Jessica Fries, <i>Accounting for Sustainability</i>
12:30	Lunch
13:20	Summary so far and instructions for breakout session Aldo Pennini & Nic Bilham
13:40	Breakout sessions: <i>How can responsible investment be delivered?</i>
15:00	Feedback from breakouts Closing remarks
15:30	Conference Closes

BIOGRAPHIES

Sarah Gordon

Chief Executive Officer – Satarla

**Secretary for Foreign and External
Affairs – Geological Society of London**



Sarah is the Chief Executive Officer at Satarla, and has spent the majority of her career working in the mining sector. Having started out as an exploration geologist camping in the wilds of northern Quebec, she has since worked in a number of areas including business divestment, safety, sustainability, risk and assurance. She recently left Anglo American to take up the role of Director in Satarla. Based in the UK, she has also spent considerable time in both Brazil and southern Africa. Sarah is also an honorary visiting lecturer at Imperial College London and approved Institute of Risk Management trainer.

Ellen Casey

Project Manager - Satarla

Ellen studied Exploration and Resource Geology at Cardiff University. Since graduating she has gained experience working in both the public and private sector in Australia, New Zealand, Ireland and the UK. She has assisted with the drafting of national and European standards and acted as a correspondence officer for the Premier of New South Wales. Now a Project Manager at Satarla, Ellen leads on the delivery of Satarla's mining and insurance research, together with many other projects.



Aldo Pennini

Associate - Satarla



Aldo is a public affairs professional with 25 years' experience and a career spanning government, global corporate and international membership organisation. He worked in the mining industry for 11 of those years. Prior to joining SATARLA in May 2019, Aldo was Director of Communications at the International Council on Mining and Metals where he led the transformation of its approach to communications.

He spent 8 years at Anglo American Plc serving as Director of External Affairs in Australia, then as Chief of Staff to two Chief Executives at the company headquarters in London, where he acquired a unique perspective on the dynamics at the top of a multinational corporation. Aldo began his career in government, spending more than 14 years serving as senior policy advisor and Chief of Staff to State Premiers and Ministers in New South Wales and Queensland (Australia) where he shaped policy and negotiated legislation ranging from natural resource management to carbon emissions trading and multicultural affairs.

David Bamford

Director – Petromall

Dr David Bamford is a well-known figure in the oil & gas industry, both as an explorer and geophysicist. In 2004 he was recruited as a non-executive director at Tullow Oil plc due to his vast knowledge and expertise in explorations.



He joined the board of Premier Oil in May 2014. He retired from BP plc in 2003, and his last four positions consisted of: Chief Geophysicist (1990-1995), Business Unit Leader (General Manager) for first West Africa and then Norway (1995-1999) and finally Head of Exploration until 2003.

He has served on the boards of Paras Ltd, a small exploration and IS/IT consulting company in which he held 22% equity, until its sale to RPS Energy in 2008 and Welltec a/s, a Danish well engineering company and as the nominee of the private equity investor Riverside.

From 2012 to 2013 he was on the board of ASX-quoted Australia Oriental Energy as a non-executive director. He was founder of Richmond Energy Partners, a small oil & gas sector, and has served as an adviser to Alliance Bernstein, Opus Executive, the Parkmead Group plc and Kimmeridge Energy LLP.

Since retiring from BP he has undertaken asset and company valuation projects for investment banks, hedge funds and small oil companies.

Christopher Reeves

**Executive Director - Digby Wells
Environmental**



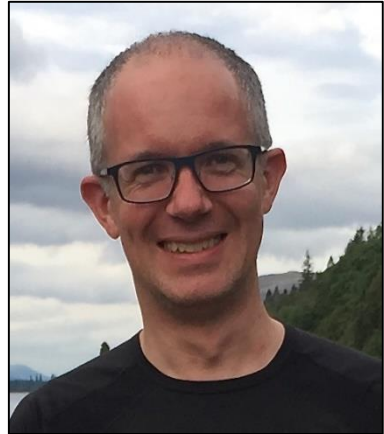
Christopher is currently an executive director at Digby Wells Environmental, a company specialising in providing environmental and social solutions for the natural resource, oil & gas and infrastructure sectors in Africa. He is also an independent associate director for Strategia Worldwide, focused on ESG risks in the energy and natural resource sectors. Chris has worked previously at the Natural Resources Advisory as an independent director, and PricewaterhouseCoopers (PwC) in a number of roles, including manager of business development, senior manager looking at client relationships, and director of global natural resources.

Chris studied at the University of the West of England, reading Business & Economics with Spanish, and also attended the London Business School. He is also a volunteer member of Chatham House, an expert panel discussing sustainable energy and natural resources, and a fellow of the Royal Geographical Society.

Nic Bilham

University of Exeter Business School /
Camborne School of Mines

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Nic is a researcher at the University of Exeter, where he is working on responsible sourcing of minerals, the relationship between mining and the circular economy, and the challenge of assuring environmental and social impact standards across complex value chains and production-consumption networks. Until 2018, he spent over 20 years working at the Geological Society of London, most recently as Director of Policy and Communications. He has a longstanding interest in interdisciplinary approaches to global societal challenges relating to meeting our resource needs sustainably, and in the roles geoscientists play in addressing these challenges.

Nic is an Executive Council member of the International Association for Promoting Geoethics (IAPG), and chair of trustees of Geology for Global Development (GfGD). He holds a BA in History and Philosophy of Science (University of Cambridge), and an MSc in Science and Technology Policy (University of Sussex).

Keiran Doyle

University of Exeter/ Camborne
School of Mines

Research Associate - Satarla

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Keiran is a postgraduate research student currently based at the Camborne School of Mines with the University of Exeter, carrying out a research project investigating the safety and sustainable development of small-scale, high-grade mining operations. The aim of his study is to assess the particular risks and hazards associated with small-scale, low-impact mining on site personnel and local populations, and provide an innovative, novel approach to management of health & safety, social and environmental impacts in order to improve sustainability and responsibility in extractive operations. His PhD is being conducted as part of the 'IMP@CT' Project, which involves multiple industry and academic partners across Europe, is being funded by the EU's Horizon 2020 programme for research and innovation (Grant no.: 730411), and aims to develop a whole systems solution for small-scale, low-impact mining of high-grade mineral deposits.

He graduated from the University of Leicester in July 2017 with an MGeol degree with honours in Applied and Environmental Geology, in which he produced a master's thesis investigating the controls on ore mineral assemblages at the Cripple Creek Epithermal Au deposit in Colorado, USA. In addition to his PhD studies, Keiran is a Research Associate with Satarla, and is also a fellow of the Geological Society of London (FGS).

Tom Albanese

Former Chief Executive Officer - Vedanta Resources plc



Tom Albanese is the former Chief Executive Officer of Vedanta Resources plc, a leading global diversified resources company, with metals and mining, oil and gas, and commercial power operations primarily in India and Africa. In addition, Tom was also the Chief Executive Officer of Vedanta Limited, until his retirement in end of August 2017.

Tom has previously served on the Boards of Konkola Copper Mines, Ivanhoe Mines, Palabora Mining Company and Turquoise Hill Resources Limited. Early in 2018, Tom was appointed to the Advisory Board of Nevada Copper, which owns 100% of the Pumpkin Hollow Copper Development Property located in Nevada, United States of America. Tom currently serves as the Lead Independent Director of Nevada Copper. In addition, he is involved in two private consortiums – Deep Sea Mining and European Mine Privatization.

Tom brings a wealth of mining experience from Rio Tinto, the second largest global diversified mining company, where he was appointed a member of the Rio Tinto Board in March 2006 and the Chief Executive for the period beginning May 2007 to January 2013. For the period 2009 – June 2015, Tom served on the Board of Visitors for the Fuqua School of Business at Duke University in North Carolina. In August 2013, Tom was appointed on the Board of Directors of Franco Nevada Corporation, a Toronto-based gold-focused royalty and metal streaming company with assets around the world.

Tom's keen interest in supporting policy reforms to emerging issues and challenges being faced by the Mining sector led to his appointment as Co- Chair of the Confederation of Indian Industry (CII) National Committee on Mining for the year 2016 – 2017. In recognition of his distinguished leadership and service to the mining industry, Tom was conferred with the 'Mining Foundation of the Southwest' 2009 American Mining Hall of Fame Award. Tom holds a Bachelor's degree in Mineral Economics and a Master's in Mining Engineering from the University of Alaska.

Karina Litvack k

Non-Executive Board Director

Karina serves on several boards and advisory bodies in the UK, Italy and the US, following a 25-year career in finance and investment management, where she developed a particular expertise in corporate governance, business ethics and sustainability.



She serves as a Non-Executive Director on the Board of Italian oil & gas company Eni SpA, currently on the Control & Risks Committee and the Sustainability & Scenarios Committee, and formerly on the Compensation Committee. She also serves on the Board of Governors of the CFA Institute; the Board of Directors of Business for Social Responsibility (BSR); the Senior Advisory Panel of oil & mining sector consultant Critical Resource; the Global Advisory Council of boutique investment bank Cornerstone Capital Inc.; and the Transparency International-UK Advisory Council.

Until 2013, Karina ran the Governance and Sustainable Investment activities of UK asset manager F&C Investments*, focusing on equity research, shareholder activism and public policy engagement.

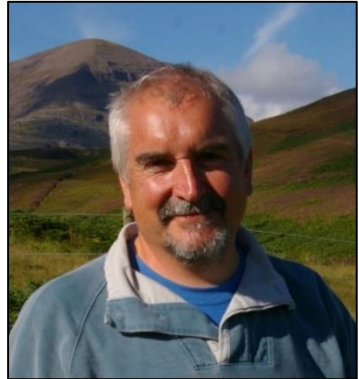
A dual Canadian and French national, Karina holds an MBA in Finance and International Business from Columbia University Graduate School of Business in New York and a BA in Political Economy from the University of Toronto.

* now BMO Global Asset Management, a unit of the Bank of Montreal.

Andrew Bloodworth

Policy lead; Decarbonisation and resource management

**British Geological Survey, Nottingham
NG12 5GG, United Kingdom**



As a science director at the British Geological Survey, Andrew is responsible for policy issues related to decarbonisation and resource management. His own interests include resource security, critical minerals and the impact of mining on developing countries. He has worked extensively in Africa and elsewhere in the developing world and was formerly Mining Advisor to the UK Department for International Development. Andrew is a Chartered Geologist and a Council Member and Trustee of the Geological Society of London. He is also a member of the UK Minerals Forum, the Confederation of British Industry Minerals Group and the Mineral Resources Expert Group of EuroGeosurveys.

Susan Joyce, MSc

President, On Common Ground Consultants Inc.



Susan is a sociologist with 25 years of experience working with companies, communities and financial institutions to identify and manage social and human rights risks of the extractive industries and other investments, primarily in developing economies. She specializes in ESG compliance and advisory support for financial institutions and in improving the social performance and human rights due diligence of companies. She leads an innovative 'boots on the ground' team assessing and training on strategic social and human rights assessments, multi-stakeholder processes, meaningful stakeholder engagement, and addressing the human and indigenous rights issues of investments with a focus on building and sustaining long-term relationships and delivering measurable benefits for local communities.

James Fryer

Class Manager – Mining, Metals & Minerals

CNA Hardy

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James Fryer is a specialist, lead underwriter in the global mining insurance market. Following a successful career in the chemical engineering sector, James has held a number of positions within the insurance market in London including risk engineering, loss adjusting, claims management, and underwriting. A vocal advocate of enhanced collaboration and transparency within the industry, James is the current chairman of the Mining Insurance and Risk Association (MIRA), a global organisation of companies and individuals involved in mining and insurance including mining companies, (re)insurers, brokers, loss adjusters, forensic accountants, lawyers, engineers, etc.

Responsible Underwriting

James Fryer

Abstract

This session will assess what measures, if any, the insurance industry takes to manage responsible underwriting and ensure it supports responsible operators. Recognising that currently there are no uniform standards or guidelines for responsible underwriting or regulations to do so, we will explore what options are available and what are the motives behind the decisions to limit investment in natural resource sectors perceived to be less responsible and/or harmful to the environment. We will hear how insurance products can influence improvements in corporate and social responsibility affecting all stakeholders within the natural resource industries.

Michael Barron

Director - Michael Barron Consulting Ltd

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Michael Barron is an independent consultant with more than 20 years' experience of working with the international oil and gas sector including analysis of political economy barriers as part of implementing business strategies and managing risks.

Michael also has extensive experience of engagement with the extractive industry transparency agenda. He gained this experience both as an employee of BG Group, a FTSE 100 oil and gas company and as a consultant.

Recent projects have included co-authoring a report for DFID on achieving a global norm on beneficial ownership transparency, a scoping study for DFID on commodity trading transparency, an Asian Development Bank-funded project in Azerbaijan on implementing a beneficial ownership disclosure regime, supporting Trinidad & Tobago with implementation of EITI beneficial ownership requirements, undertaking a commodity trading transparency pilot project in Ghana for EITI and a scoping study on beneficial ownership disclosure in Ethiopia, also for EITI.

Zak Wood

Director – DBK Advisory

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Zak Wood is a Director at DBK Advisory, a specialist firm assisting medium-large organisations to clearly define their whole-value proposition for investors and other stakeholders, and to set strategies that look beyond only financial profit as a measure of success.

Zak’s expertise in systemic risk, corporate projects, and complex systems supports work on several broad initiatives seeking to expand the concept of corporate value, both for individual organisations and as industries collaborating for common societal benefit. He works with faith and mining in South Africa, establishing the next vision of the mining industry, unpacking structural challenges and find pro-active solutions to ensure a stable and sustainable future, both for the mining companies and broader society.

It is Zak’s firm belief that a “whole-value” approach to investing is a part of incentivising better behaviour among all players in the economy, in ways that will lead to a more stable, more humanely prosperous society.

Aiden Choles

Director – DBK Advisory

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Aiden Choles is a co-founder and Director of DBK Advisory, a specialist firm that assists medium to large organisations to clearly define their whole-value proposition for investors and other stakeholders.

With post-graduate degrees in psychology and theology, Aiden orients his work around a core purpose of assisting organisations to be better – to be more effective in healthy ways. He is deeply interested in the leadership orientations called for in the new complex world of work, how we shift the core narratives that shape the organisational world and how we co-create an organisational world that is effective & healthy in the face of unrelenting change.

Aiden's experience is diverse, having managed projects, consulted and conducted research in the private and development sectors, with specific experience in finance, education, mining, petrochemicals and environmental management. Aiden's skill set encompasses coaching, facilitation, research and organisational development and has applied his knowledge and expertise in narrative-based coaching, facilitation and research aimed at improving organisations and supporting decision-making in complex situations. Aiden is widely published, having written two books in the realm of narrative coaching and people management and co-authored peer-reviewed journal articles.

Dr Kat Bruce

**Co-founder & Managing Director -
NatureMetrics**



Kat is a biodiversity scientist with a PhD in molecular ecology. She founded NatureMetrics in 2015 to make powerful molecular tools for biodiversity assessment available to environmental managers.

NatureMetrics applies high-throughput DNA sequencing to complex environmental samples, generating biodiversity data at unprecedented scales, across multiple taxonomic groups, with the statistical power to reveal even fine-scale changes in ecological state or condition.

The company is working with international NGOs and industry clients, including in the energy and natural resources sectors. Projects are located across the world from the tropics to the poles and span environments ranging from the ocean floor to the Amazon rainforest. The approach revolutionises our ability to generate meaningful biodiversity baselines and to monitor biodiversity changes in response to impact and restoration activities throughout the project lifecycle.

Frances Wall

Professor of Applied Mineralogy, Camborne School of Mines, University of Exeter, Penryn Campus, Penryn, TR10 9FE.

f.wall@exeter.ac.uk



Frances Wall is Professor of Applied Mineralogy at Camborne School of Mines (CSM), University of Exeter and specialises in technology raw materials, especially rare earth elements, with interests in geology, processing and responsible sourcing. A former Head of CSM, Frances leads two international consortium research projects on rare earths and other critical metals (www.sosrare.org, www.carbonatites.eu) that include interdisciplinary approaches to making new geomodels for these ore deposits.

The models will include environmental and social factors relevant to responsible sourcing. Frances also works on the MIREU project, (www.mireu.eu) that is creating a network of European Mining regions, representing Cornwall, UK. This project includes design of a toolkit to help European mining companies gain public acceptance and support. Cornwall is experiencing a resurgence of interest in technology metal ores, and geothermal energy, and has a strong mining business cluster that works worldwide (<https://cornwallminingalliance.org/>).

Talk: Responsible Manufacturing: geologists help get it right from the start

Frances Wall, Robert Pell, Nic Bilham

Robert Pell

Director of Minviro

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Robert Pell is Director of Minviro, a spin-out company from University of Exeter. Minviro supports mining companies in adopting life cycle assessment approaches for their projects, highlighting environmental impacts and opportunities for improvements during the development stages of critical metal projects. Robert completed his PhD at Camborne School of Mines (University of Exeter) as part of the NERC funded SoSRare project on the topic 'responsible sourcing of rare earth elements'. During this project novel life cycle assessment approaches were developed and applied to rare earth projects in the prefeasibility stage of development. A unique method to apply life cycle assessment to mine planning was also developed and these technologies have been further refined and applied in commercial settings. Prior to this Robert worked as Assistant Editor at International Mining, a globally distribution magazine covering technical innovations and project case studies for the mining industry.

Talk: Quantifying environmental risk for mining projects using life cycle assessment

Robert Pell, Frances Wall, Mark Fellows, Charles Cooper

Claudia Jukes

Cyan Finance, 8 Headfort Place,
London, SW1X 7DH

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With a background in scientific research on behalf of NGOs into responsible farming systems and species conservation, as well as a role in establishing CSR for a significant football club, Claudia joined Cyan Finance in April to discover new investment opportunities, in keeping with their ethos of sustainability.

After years of resistance, she is thrilled to see that finally, both industry and public opinion are swinging in favour of sustainability, in line with her core belief that quality of life need not come at the expense of the natural world.

Claudia hopes that her passion and drive for sustainable living will help discover new ways to incentivise the finance sector to divert capital to more eco-friendly causes, to ensure the conservation of our unique ecosystem for generations to come.

Jonny Page

Cyan Finance, 8 Headfort Place,
London, SW1X 7DH

jonny@cyanfinance.com



Jonny is responsible for securing new lending, investment and partnership opportunities for Cyan Finance, the go to finance house for green businesses. With a background of successfully co-founding and securing investment for his own start-ups and running a charity, Jonny now works with prospective companies to bring them into the Cyan portfolio.

Jonny is excited about financing opportunities with green, sustainable and environmental missions. His background in sustainability includes partnerships with UNEP and standing as councillor for the Green Party so the opportunity to help build the future of green banking is a real privilege.

Talk: Responsible investment – an investment company perspective

Claudia Jukes, Jonny Page

Sarah Scott

**Senior Advisor for Groundwater - Environment
and Business Team**

Sarah.I.Scott@environment-agency.gov.uk



Sarah is a chartered Hydrogeologist who has been with the Environment Agency for nearly 30 years. She currently leads on the regulation and protection of groundwater in the onshore oil and gas industry at a national level, including the relatively new shale gas exploration industry. Sarah is also involved in groundwater protection from other deep sub-surface activities such as geothermal and deep disposal of waste including radioactive materials.

Marion Maloney

Policy, Risk & Governance Manager- Environment Agency Pension Fund

Marion.maloney@environment-agency.gov.uk

Marion leads on responsible investment for the Environment Agency Pension Fund, which has just been recognised by the United Nations Principles for Responsible Investment as a Global Leader. Marion joined the EAPF as Policy Governance and Risk Manager in November 2018. Before that she was a contributing members' representative on the Pensions Committee, alongside her day job as a senior adviser regulating industry. Marion has over 20 years' experience in public policy at local, national and European level, and has extensive background in environmental regulation.

Catherine Howarth

Chief Executive - ShareAction

catherine.howarth@shareaction.org



Catherine joined ShareAction as Chief Executive in 2008. ShareAction coordinates civil society activism to promote responsible investment across Europe. She is a board member of the Scott Trust, owner of The Guardian, serving on the Scott Trust's investment committee. She also serves on HM Treasury's Asset Management Taskforce. She was a Member Nominated Trustee of The Pensions Trust for five years until spring 2013. Catherine was recognised by the World Economic Forum as a Young Global Leader in 2014.

Becci Collacott

Senior Manager for Sustainable Development - IPIECA



Becci joined IPIECA in December 2016. She has over ten years of experience working in the energy industry with a career spanning both commercial analysis, external affairs and sustainability. She is currently Senior Manager for Sustainable Development, which covers IPIECA's work on the UN Sustainable Development Goals, Sustainability Reporting, and the Net Positive Approach.

Becci has a BA Hons in Philosophy, Politics and Economics from the University of Oxford.

Aidan Davy

Chief Operating Officer - ICMM



Aidan Davy joined ICMM in June 2007. As COO, he is responsible for strategy development and implementation. He also leads ICMM's work on environmental issues, including the management of tailings. Prior to assuming the role of COO in 2015, Aidan led ICMM's work on social and economic development, investor engagement and sustainability reporting.

Aidan has over 30 years of cross-sectoral experience on sustainable development issues, working with a range of private, multi-lateral and not-for-profit organizations, including the World Bank and the International Finance Corporation in Washington DC.

Greg Coleman

Managing Director – Petromall

Greg is a Managing Director for Petromall with more than 40 years in the oil and gas industry. Now working to help companies within the industry to develop, from strategy and investment to decision making and management systems, he co-founded advisory firm, PetroMall, in 2012. Having started as an engineer at BP, his career has encompassed all levels and areas of the oil and gas industry from the ground up to corporate level. That has included leadership roles in environmental policy, customer relations, health and safety and investor relations. He has evaluated and closed on numerous asset sales and purchases, where his first and largest asset swap was completed between the UK and Norway for \$400 million.

Taking that global experience and applying it to private organisations, in recent years he has worked with many companies worldwide, on projects ranging from rescue operations and crisis management to business growth and development.

Chris Wheaton

Director – Stifel

Chris Wheaton joined Stifel in 2017. Based in London, he is an analyst on the Oil & Gas sector. Prior to joining Stifel, he spent 21 years in the investment management industry, working at Fidelity Investments, Aviva Investors, Allianz Global Investors and T. Rowe Price, and has specialised as an analyst on the Oil & Gas sector since 2003. Chris graduated with a Masters degree in Chemical Engineering from the University of Cambridge.

Having trained as a Chemical Engineer, Chris spent over half of his 20 year career as an investment analyst following the Oil & Gas industry and global energy markets, and he's been fortunate to be on the sector during a time of extraordinary change in the global energy industry, and to take advantage of the stockpicking opportunities this rate of change has generated. With a lot of hard work, Chris has been top ranked among his investment peers in Europe by the management teams of some of the biggest global energy companies for the quality and depth of his analysis and his investment insight- not just for the short-term, but on the key strategic issues facing industry CEOs.

He has extensive knowledge and understanding of what clients want from research, and what makes good research - from questions about depth of corporate resource bases and the ability to generate cash flow in the short-term to the long-term existential risks to hydrocarbon markets and investors posed by disruptive forces such as renewables-on-gas competition or electric vehicles.

Research is also about presenting ideas well- he has pitched and sold money-making ideas, insight and research themes to fund managers and clients for years. Chris has also presented at a number of industry conferences, and has significant experience with the media, across press, live TV and radio such as BBC TV, BBC Radio 4, Bloomberg and CNBC.

Jay Wagner

Founder & Director – Plexus Energy

Jay is the founder and director of Plexus. He has 25 years' experience in social and environmental consulting and has held senior appointments with major blue-chip consultancies. He has carried out assignments around the world and specialises in social performance and stakeholder engagement, HSE and social due diligence, socio-economic impact studies, policy analysis and regulatory compliance.



He has managed several major assignments for energy and mining companies, including a global portfolio review on labour influx and social impacts for the World Bank; a social performance audit of Repsol's upstream operations in South America; a SIA for a mining project in Africa; developing stakeholder engagement plans and managing a socio-economic impact study for an offshore oil project in the South Atlantic. He has carried out over 50 buy and sell-side HSES due diligence assignments in Europe, Latin America and the Far East, and formerly led the environmental practice for Petroconsultants/IHS Energy. For the past three years he has been a senior social advisor to Tengizchevroil in Kazakhstan, focusing on social risk management, stakeholder engagement, social investment and compliance with international lender requirements.

Based in London, he has an MSc in international law and marine resource management from the London School of Economics and a BA in political science from the University of Iowa. He is bilingual in English and German, and fluent in French, Spanish and Norwegian.

Pierre Courtemanche

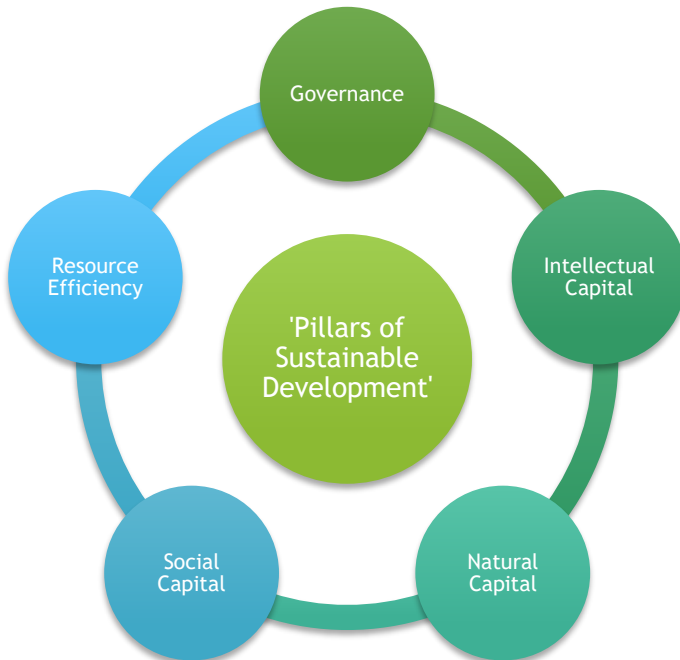
Sustainability and Supply Chain Strategist
Founder of GeoTraceability Ltd.



A passionate advocate for sustainable development, Pierre Courtemanche began working with smallholders in developing and emerging countries three decades ago as an OXFAM volunteer. In 2011, he founded GeoTraceability Ltd., a global company dedicated to putting smallholders on the map through data collection and the traceability of their products. In 2018, GeoTraceability Ltd. became part of OPTEL GROUP, now the world's leading provider of traceability solutions. Considered the “father” of geotraceability technology, Pierre is committed to using innovation to support responsible sourcing of raw materials and to improve the livelihood of smallholders around the globe.

THE PILLARS OF SUSTAINABILITY

FROM THE GLOBAL SUSTAINABLE COMPETITIVENESS INDEX, 2016



Responsible investment of natural resources is built on 5 'pillars' of sustainable development;

1. **Governance-** Infrastructure, market state, employment structure, and a framework for sustainable wealth generation.
2. **Intellectual Capital-** Capability to generate wealth and employment through innovative solutions, industries and people that add value to the company or operation.
3. **Natural Capital-** The natural environment, its resource availability, and the supply & depletion of said resource.
4. **Social Capital-** Quality of life of an affected country/ community, measured by health, security, freedom and equality.
5. **Resource Efficiency-** The way that available resources are used, in order to remain competitive on the market, as well as sustainable.

SEVEN QUESTIONS FOR SUSTAINABLE DEVELOPMENT

1. ENGAGEMENT

Are engagement processes in place and working effectively?

2. PEOPLE

Will people's well-being be maintained or improved?

3. ENVIRONMENT

Is the integrity of the environment assured over the long term?

4. ECONOMY

Is the economic viability of the project or operation assured, and will the economy of the community and beyond be better off as a result?

5. TRADITIONAL AND NON-MARKET ACTIVITIES

Are traditional and non-market activities in the community and surrounding area accounted for in a way that is acceptable to the local people?

6. INSTITUTIONAL ARRANGEMENTS AND GOVERNANCE

Are rules, incentives, programs and capacities in place to address project or operational consequences?

7. SYNTHESIS AND CONTINUOUS LEARNING

Does a full synthesis show that the new result will be positive or negative in the long term, and will there be periodic reassessments?

From 'Mining's contribution to sustainable development' by ICMM, 2012.

Adopting a 4-step management approach to these questions can be an effective way of improving sustainability & responsibility of operations, by looking at the context each problem in turn, assessing and trialing the potential solutions, and finally reviewing their effectiveness in practice. Investors can use a similar methodology to evaluate the responsibility of an operation.

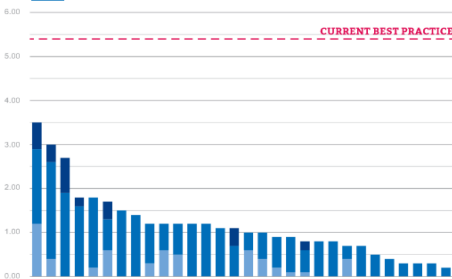


RESPONSIBILITY PERFORMANCE ACROSS THE MINING INDUSTRY

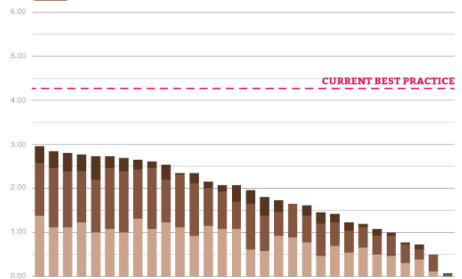
FROM THE RESPONSIBLE MINING INDEX, 2018 RMI ANALYTICAL FRAMEWORK

Overall results

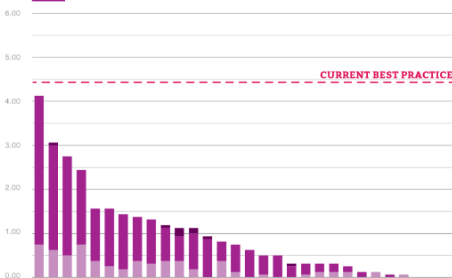
Economic Development



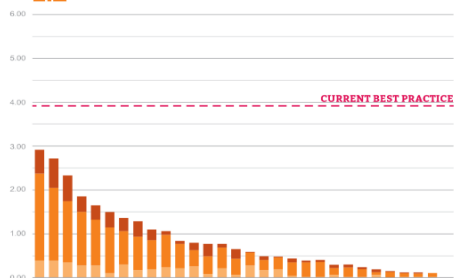
Business Conduct



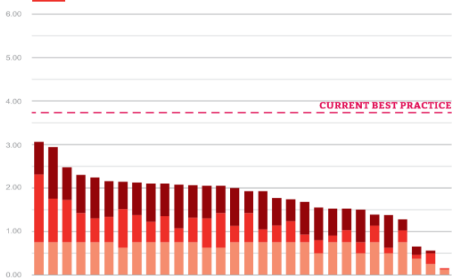
Lifecycle Management



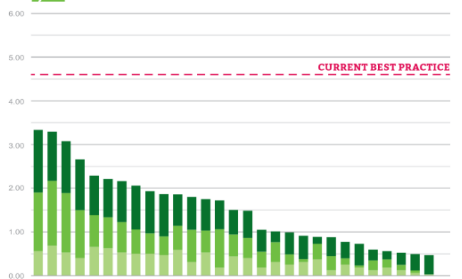
Community Wellbeing



Working Conditions









Environmental Responsibility



--- Aggregation of best scores for all indicators in the given thematic area.

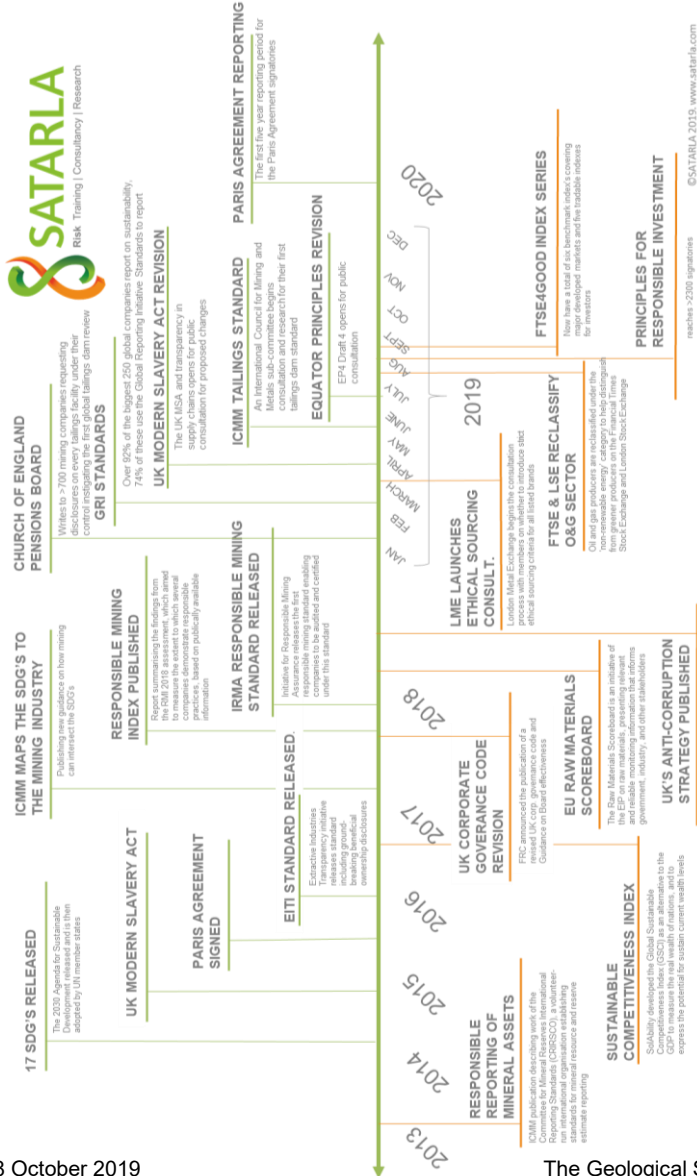
Responsible Investment in Natural Resources

		Measurement Areas		
		Commitment (15%)	Action (56%)	Effectiveness (29%)
Thematic Areas			Economic Development	
			Business Conduct	
			Lifecycle Management	
			Community Wellbeing	
			Working Conditions	
			Environmental Responsibility	

SUMMARY

- Large-scale mining companies have in recent years demonstrated significant improvements in their overall responsibility towards economic, environmental, social and governance issues.
- The results of the RMI study in 2018 found that, while there is some discrepancy in the standards being implemented between different companies, the 'best practice' standard for each indicator is much higher than the most responsible companies' scores.
- What this clearly shows is that the systematic delivery of existing, high-level responsible practices is achievable for all large mining companies, and is not limited by company size, commodity type, or country of operation.
- Ensuring that companies have the necessary management structure, resources and motivation to successfully implement and maintain 'best practice' standards from a responsibility perspective is essential, so this will be an important challenge to overcome.
- Tools for ESG guidance applied to natural resource extraction, as well as the introduction of new standards and acts, have already gone some way to further improving responsibility and sustainability in the mining industry.

A TIMELINE OF ESG PUBLICATIONS & GUIDANCE IN THE NATURAL RESOURCES INDUSTRY



SOME ESG ISSUES AND THEIR EFFECT ON COMPANY VALUE

Environmental	Social	Governance
<p>Issue: Climate change and carbon emissions</p> <p>Valuation risk: Future regulation and taxation</p>	<p>Issue: Community relations</p> <p>Valuation risk: Failure to anticipate social trends</p>	<p>Issue: Executive pay</p> <p>Valuation risk: Inappropriate reward structure leads to poor long-term decisions</p>
<p>Issue: Air and water pollution</p> <p>Valuation risk: Fines & reputational harm</p>	<p>Issue: Labour standards</p> <p>Valuation risk: Reputational damage</p>	<p>Issue: Disclosure</p> <p>Valuation risk: Litigation risk if fail to disclose known ESG risks</p>
<p>Issue: Waste management</p> <p>Valuation risk: Cost of production</p>	<p>Issue: Health & Safety record</p> <p>Valuation risk: Major accident or interrupted production</p>	<p>Issue: Tax strategy</p> <p>Valuation risk: Reclaimed taxes, public opinion leads to boycott.</p>

ESG analysis is an effective complement to overall financial analysis, and is considered an important component of fundamental investing, where investors will attempt to model all the driving factors influencing a company’s financial performance (OECD, 2017).

Integration of the UN sustainable development goals into this analysis for a more encompassing assessment will be essential for achieving responsible investment, so ensuring that the analyses can be standardised across multiple different metrics surrounding EESG may be a significant challenge.



HOW CAN ESG CREATE VALUE IN BUSINESS?

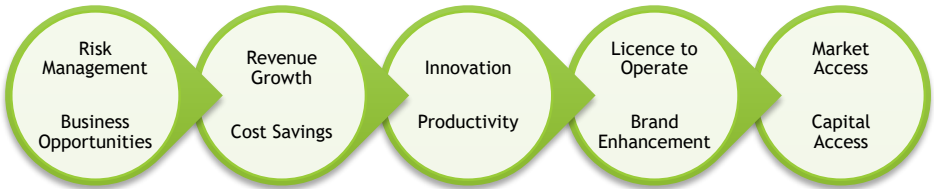


Figure 1: Value drivers for ESG (CDC Toolkit for Fund Managers, 2010)

The main motivating factors in creating environmental, social and governance value in businesses are outlined above, covering a range of perspectives, from finance to branding, risk and licencing.

Natural resource investors and companies using ESG to improve and maintain their responsible practices can achieve mutual financial benefit, mainly due to the reduced costs in remediation and compensation associated with significant environmental & social impacts, but also by encouraging new business relationships built on demonstrated sustainable practices.



Figure 2: The ESG-informed Investment Process (CDC Toolkit for Fund Managers, 2010)

Taking a step-by-step approach to assessing ESG value allows investors to efficiently determine areas for improvement, by:

1. Identifying and prioritising the main ESG risks,
2. Performing due diligence using ESIA's,
3. Producing and implementing a tailored action plan,
4. Monitoring for effectiveness of implementation,
5. Final reporting providing feedback and further considerations.

OVERCOMING THE CHALLENGES OF INCORPORATING ESG INTO MAINSTREAM INVESTING

FROM BUSINESS FOR SOCIAL RESPONSIBILITY, 2008

Barriers

- A lack of long-term evidence linking ESG to financial returns.
- The need for regulation of ESG reporting for reliable comparison.
- Managing short-term financial reporting demands vs. long-term ESG assessments.
- The relative shortage of investment professional capable of carrying out ESG assessments.
- The cynical attitude towards consideration of ESG criteria.

Potential solutions

- Continued tracking & identifying of stocks by academics & investors using ESG criteria and assessment frameworks to recognise trends of returns, and a reputable financial model to validate the criteria.
- Introduction of regulatory consequences to incentivise the reporting of ESG performance by companies, as well as possible reputational & financial benefits.
- Promotion of the belief and understanding that long-term assessments and reporting are important for; a) sustained incorporation of ESG criteria, and b) creating long-term business value.
- Integration of ESG issues into education, via core teachings and textbooks for MBA, finance and investment degree programmes, as well as in training of investment professionals.
- Invite open discussion between various stakeholders across industry & academia, focused on the necessity of ESG criteria for responsible investing.
- Ensuring that the terminology used to describe ESG criteria reflects its importance; i.e. avoiding 'non-financial' in favour of 'extra-financial'.

2018 GLOBAL SUSTAINABLE INVESTMENT REVIEW

FROM THE GLOBAL SUSTAINABLE INVESTMENT ALLIANCE

Sustainable investing defined...

Sustainable investing is an investment approach that considers environmental, social and governance (ESG) factors in portfolio selection and management. For the purpose of the GSIA 2018 global report and for articulating the shared work in the broadest way, GSIA uses an inclusive definition of sustainable investing, without drawing distinctions between this and related terms such as responsible investing and socially responsible investing. The report primarily uses the term sustainable investing.

The GSIA definitions of sustainable investment, published in the *Global Sustainable Investment Review 2012*, have emerged as a global standard of classification. These are:

- 1. NEGATIVE/EXCLUSIONARY SCREENING:** the exclusion from a fund or portfolio of certain sectors, companies or practices based on specific ESG criteria;
- 2. POSITIVE/BEST-IN-CLASS SCREENING:** investment in sectors, companies or projects selected for positive ESG performance relative to industry peers;
- 3. NORMS-BASED SCREENING:** screening of investments against minimum standards of business practice based on international norms, such as those issued by the OECD, ILO, UN and UNICEF;
- 4. ESG INTEGRATION:** the systematic and explicit inclusion by investment managers of environmental, social and governance factors into financial analysis;
- 5. SUSTAINABILITY THEMED INVESTING:** investment in themes or assets specifically related to sustainability (for example clean energy, green technology or sustainable agriculture);
- 6. IMPACT/COMMUNITY INVESTING:** targeted investments aimed at solving social or environmental problems, and including community investing, where capital is specifically directed to traditionally underserved individuals or communities, as well as financing that is provided to businesses with a clear social or environmental purpose; and
- 7. CORPORATE ENGAGEMENT AND SHAREHOLDER ACTION:** the use of shareholder power to influence corporate behaviour, including through direct corporate engagement (i.e., communicating with senior management and/or boards of companies), filing or co-filing shareholder proposals, and proxy voting that is guided by comprehensive ESG guidelines.

STANDARDISATION OF RESPONSIBLE PRACTICES IN MINING

FROM THE INITIATIVE FOR RESPONSIBLE MINING ASSURANCE STANDARD, 2018

The provision of comprehensive standards for mining operations that address **business integrity** and **governance**, effective mine **legacy planning**, **social responsibility** and **environmental management** is essential for sustainable operating in the extractives sector. The IRMA has produced documentation describing an ideal 'set of objectives and leading performance requirements for environmentally and socially responsible practice, and through this standard:

- Industrial-scale mines can document and account for their leadership, and receive value and recognition for proven responsible performance;
- Purchasers of metals and minerals can ensure that they source their raw materials from mines that meet a full array of leading practices in social and environmental responsibility;
- Communities, workers and civil society organizations can convey social licence with assurance that a mine operates to leading levels of socially and environmentally responsible performance.

Companies and organisations that are provided with clear guidance of the minimum requirements in order to meet responsibility expectations from an environmental, societal and governance perspective, as long as they feel incentivised to follow those standards, are more likely to bring about positive, sustainable changes in their operating practices, which can go some way towards addressing the sustainable development goals set out by the UN.

REFERENCES

ESG PUBLICATION TIMELINE

SGDS: www.icmm.com/sdg

<https://www.un.org/sustainabledevelopment/development-agenda/>

<https://www.investopedia.com/terms/f/ftse4good-index.asp>

<https://www.theguardian.com/environment/2019/jul/03/gas-and-oil-firms-reclassified-under-non-renewables-on-lse-ftse>

<https://equator-principles.com/ep-association-news/ep4-draft-consultation-begins/>

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<https://responsibleminingindex.org/en>

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Business for Social Responsibility, 2008, Environmental, Social and Governance: Moving to mainstream investing?

CDC, 2010, CDC Toolkit on ESG for fund managers, Rosencrantz & Co.

Global Sustainable Investment Alliance, 2018, Trends Report 4th Biennial Edition.

ICMM, 2012, Mining's contribution to sustainable development – an overview, InBrief.

Initiative for Responsible Mining Assurance, 2018, IRMA Standard for Responsible Mining IRMA-STD-001

OECD (2017), Investment governance and the integration of environmental, social and governance factors.

IMPORTANT INFORMATION

Burlington House Fire Safety Information

If you hear the Alarm

Alarm Bells are situated throughout the building and will ring continuously for an evacuation. Do not stop to collect your personal belongings.

Leave the building via the nearest and safest exit or the exit that you are advised to by the Fire Marshal on that floor.

Fire Exits from the Geological Society Conference Rooms

Lower Library:

Exit via main reception onto Piccadilly, or via staff entrance onto the courtyard.

Lecture Theatre

Exit at front of theatre (by screen) onto Courtyard or via side door out to Piccadilly entrance or via the doors that link to the Lower Library and to the staff entrance.

Main Piccadilly Entrance

Straight out door and walk around to the Courtyard.

Close the doors when leaving a room. **DO NOT SWITCH OFF THE LIGHTS.**

Assemble in the Courtyard in front of the Royal Academy, outside the Royal Astronomical Society. Event organizers should report as soon as possible to the nearest Fire Marshal on whether all event participants have been safely evacuated.

Please do not re-enter the building except when you are advised that it is safe to do so by the Fire Brigade.

First Aid

All accidents should be reported to Reception and First Aid assistance will be provided if necessary.

Facilities

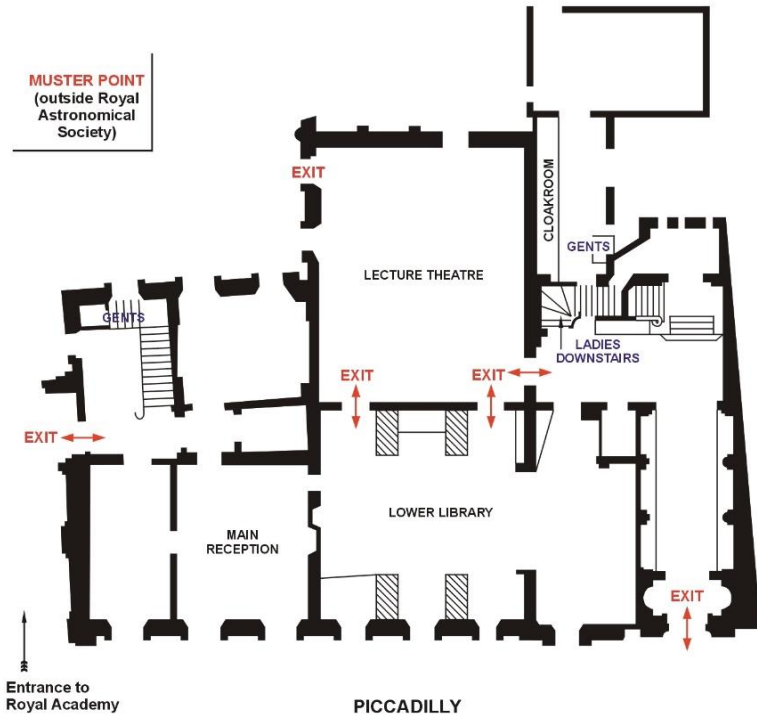
The ladies toilets are situated in the basement at the bottom of the staircase outside the Lecture Theatre.

The Gents toilets are situated on the ground floor in the corridor leading to the Arthur Holmes Room.

IMPORTANT INFORMATION

Ground Floor Plan of the Geological Society,
Burlington House, Piccadilly

ROYAL ACADEMY
COURTYARD



IMPORTANT INFORMATION

GSL CODE OF CONDUCT FOR MEETINGS AND OTHER EVENTS

INTRODUCTION

The Geological Society of London is a professional and learned society, which, through its members, has a duty in the public interest to provide a safe, productive and welcoming environment for all participants and attendees of our meetings, workshops, and events regardless of age, gender, sexual orientation, gender identity, race, ethnicity, religion, disability, physical appearance, or career level.

This Code of Conduct applies to all participants in Society related activities, including, but not limited to, attendees, speakers, volunteers, exhibitors, representatives to outside bodies, and applies in all GSL activities, including ancillary meetings, events and social gatherings.

It also applies to members of the Society attending externally organised events, wherever the venue.

BEHAVIOUR

The Society values participation by all attendees at its events and wants to ensure that your experience is as constructive and professionally stimulating as possible.

Whilst the debate of scientific ideas is encouraged, participants are expected to behave in a respectful and professional manner - harassment and, or, sexist, racist, or exclusionary comments or jokes are not appropriate and will not be tolerated.

Harassment includes sustained disruption of talks or other events, inappropriate physical contact, sexual attention or innuendo, deliberate intimidation, stalking, and intrusive photography or recording of an individual without consent. It also includes discrimination or offensive comments related to age, gender identity, sexual orientation, disability, physical appearance, language, citizenship, ethnic origin, race or religion.

The Geological Society expects and requires all participants to abide by and uphold the principles of this Code of Conduct and transgressions or violations will not be tolerated.

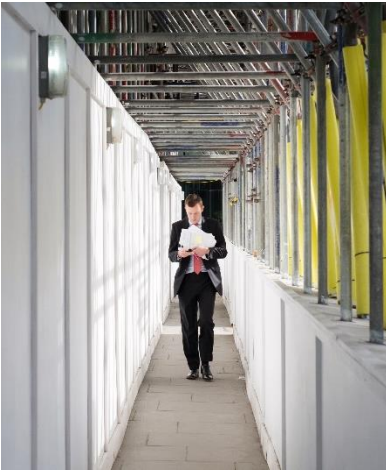
BREACH OF THE CODE OF CONDUCT

The Society considers it unprofessional, unethical and totally unacceptable to engage in or condone any kind of discrimination or harassment, or to disregard complaints of harassment from colleagues or staff.

If an incident of proscribed conduct occurs either within or outside the Society's premises during an event, then the aggrieved person or witness to the proscribed conduct is encouraged to report it promptly to a member of staff or the event's principal organiser.

Once the Society is notified, staff or a senior organiser of the meeting will discuss the details first with the individual making the complaint, then any witnesses who have been identified, and then the alleged offender, before determining an appropriate course of action. Confidentiality will be maintained to the extent that it does not compromise the rights of others. The Society will co-operate fully with any criminal or civil investigation arising from incidents that occur during Society events.

Responsible Investment in Natural Resources





**Geology
for
Global
Development**

**Registered Charity
Number: 1165663**

Mobilising and reshaping the geology community to help deliver the UN Sustainable Development Goals



1 NO POVERTY



2 ZERO HUNGER



3 GOOD HEALTH AND WELL-BEING



4 QUALITY EDUCATION



5 GENDER EQUALITY



6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



10 REDUCED INEQUALITIES



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



14 LIFE BELOW WATER



15 LIFE ON LAND



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



17 PARTNERSHIPS FOR THE GOALS



Based In the United Kingdom, we organise conferences and training, support international projects working to achieve the SDGs, and advocate for the importance of Earth science at local, national and international forums.



**We are an affiliated organisation
of the International Union of
Geological Sciences**

Find out more and get involved:

Website: www.gfgd.org

Blog: blogs.egu.eu/gfgd

Facebook: facebook.com/gfgd.org

Twitter: @Geo_Dev

