

# NEWSLETTER

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## SECED 2019–2020 Young Members' Sub-Committee during COVID-19 pandemic

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**Valentina Putrino**  
*SECED YMSC Guest Editor*

**A**fter being proclaimed the Chair of the YMSC during the AGM in October 2019, I instantly felt the responsibility that the role was holding and I embraced the challenges with great enthusiasm and with a big pinch of adrenaline. On that night I also introduced three new members: Areti Koskosidi, a Geotechnical Engineer working in Arup's seismic team in London, Arash Nassirpour, a Teaching Fellow in Structural and

Earthquake Engineering at UCL's Department of Civil Engineering and a member of the EPICentre research group, and Jason Pelekis, a PhD Candidate at the University of Cambridge, Department of Engineering. Soon after, we decided to co-opt two more candidates: Marco Baiguera, a Research Fellow in the Department of Civil, Geomatic and Environmental Engineering (CEGE) at University College London, and Stamatina Marinatou, a Civil Engineer currently working at Royal Haskoning DHV, getting involved

in the design of international infrastructure projects. A total of five new entries were added to an already diverse, interesting and variegated group of young individuals, all to actively contribute to the SECED group with drive and passion.

We had very big plans ahead of us for the coming months, including a series of evening seminars and site visits. We managed to keep these as face-to-face activities until COVID-19 struck our lives and forced all of us to re-adjust to a “new normality” based on a work-from-home lifestyle, something most of us had not considered before, or at least not to such an extent.

Notwithstanding these life-changing adjustments, the YMSC members managed to continue gathering online. We delivered nine different presentations, some in the form of lunchtime seminars and some as evening lectures. We tried to always strike the balance between industrial and academic speakers, with the main aim of encouraging the YMSC involvement whilst treating these occasions as a spotlight to showcase young professionals, and young academics’ skill sets. The topics of each presentation were chosen after having conducted a survey among the members, to prioritize what the YMSC wanted to have showcased.

Bartolomeo Panto, a research fellow at Imperial College was the first of our speakers, with a presentation entitled “New Challenges on the Assessment of Historical Structures”, which was delivered as a joint YMSC SECED – IStructE YMG London group event.

Arete co-organised a talk delivered by Professor Paul Reynolds from University of Exeter on “Control of Human-Induced Vibrations: An Integrated Approach to Vibration Serviceability Design”, delivered in person around mid-March, just before the official lockdown came into force.

Our first real online event was the one delivered by Domenico Gaudio, a Research Associate at University of Cambridge during the April AGM and organized by Fiona Hughes, the YMSC vice chair. The talk was on the subject “Taking Advantage of Soil Plastic Mechanisms in the Seismic Design of Geotechnical Systems”.

In May, Francesca Roscini from University of Sheffield shared some insights on her current Marie Curie Research Project with a presentation entitled “Strengthening of Masonry Vaults with Steel Reinforced Grout”.

June was the month in which Socrates Angelides, current YMSC member, managed to get in contact with young professionals from D.J Goode & Associates Ltd, and he introduced the talk on “Design Solutions for the Blast Protection of Structures: Industry Experiences from Young Professionals”.

A small break interurred before being able to have the following speaker Stelios Minas from AIR Worldwide Singapore, sharing his latest “Advancements in the Seismic Risk Assessment of Reinforced Concrete Buildings”.

Marco Baiguera and Marta Del Zoppo from University Federico II of Naples had the September slot to present the

topic of their latest research entitled “Advances in Design and Assessment of Buildings Subjected to Tsunami”, introduced by Professor Tiziana Rossetto, world leading expert on the topic of tsunami engineering.

The October AGM evening meeting was dedicated to showcasing the work of Elena Elettore and Massimo Latour from University of Salerno, done in collaboration with Fabio Freddi from UCL, entitled “Seismic Response and Self-Centering capacity of moment resisting frames with “FREE from DAMAge” Joints”. With this paper, Elena won the best paper by a young author prize at the SECED 2019 Conference.

To conclude the 2019–2020 seminar series, a joint SECED, EEFIT and IStructE YMG London event was put together to showcase the SARAID Case Studies including Albania & Beirut and delivered by Josh Macabuag, Mark Scorer and Suzie Cooper, all young professionals involved in the volunteering UK Charity Search & Rescue Assistance in Disasters SARAID.

Among other activities, Marco and Stamatina endeavoured to build our YMSC dedicated webpage, within the main SECED website, under the supervision of the current Vice Chair, Andreas Nielsen.

Three site visits were initially planned. The first one of these was to have been to HR Wallingford, to visit the 3rd generation Europe’s largest tsunami simulator. The second site visit was planned to be done to the spinoff Full Scale Dynamics, launched by Prof Reynolds and his research group at University of Exeter. The group was offered a guided visit to the base of operation location in Exeter, to see in action some of the testing facilities, covering a wide range of expertise in the range of dynamic testing and structural monitoring as well as vibration control. The third site visit was to inspect the Marsh Lane Viaduct in Leeds and the current installed system of fibre optic strain and temperature sensors and acoustic emission sensors to monitor cracking and low noise accelerometers of the masonry viaduct. Jason was in charge of coordinating the organization and keeping the YMSC group informed whilst being in contact with Haris Alexakis, a research associate of the Cambridge Centre for Smart Infrastructures and Construction, the main project investigator. The plan is to carry out these site visits in the next mandate of the YMSC (year 2020–2021), should the current Covid-19 restrictions allow it and as long as the 2020–2021 members of the committee are still on board.

My year as YMSC Subcommittee Chair concluded with a shared endeavour to set up the competition for the new SECED logo, in collaboration with the current Vice Chair of the SECED Committee, Andreas Nielsen and Mark Scorer. 43 very interesting designs were submitted from all over the world. The main committee was involved in the voting process and the winner is announced later in this issue.

It is time for me to leave the chair to Fiona Hughes, who

will surely take on board some of the unrealised plans we had, which were disrupted by the pandemic.

Although it is undeniable that COVID-19 did impact our lives, the YMSC group has proven to still be united, resilient, creative in the ways of gathering and of keeping the mood high, but most importantly, driven by strong motivation: we have proven that although acting remotely, we have never been distant to one another.

## 2019–2020 Young Members' Subcommittee

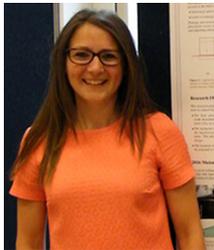
### Valentina Putrino (University College London)

Valentina Putrino is a PhD Student and Research Assistant at University College London's EPICentre, where she is working on the development of a framework for the multi-hazard assessment of historic masonry structures. She has gained experience on seismic risk assessment taking part in many field investigations within research and consultancy projects in Italy and in the Philippines. In 2016 she took part in the EEFIT mission to Central Italy and later she won the EEFIT 2017 Research Award to continue her research on the cumulative damage to the historic urban fabric of Norcia (Italy). She is member of the EEFIT Committee and the designated liaising member between both Committees.



### Fiona Hughes (Arup)

Fiona joined Arup as a geotechnical engineer in autumn of 2019, having recently completed a PhD in earthquake geotechnical engineering at the University of Cambridge. Her research investigated the seismic behaviour of structures with basements in liquefiable soil – primarily using dynamic centrifuge modelling, and also through a mechanical model which she developed. Fiona was part of the 2016 EEFIT reconnaissance mission to Muisne, Ecuador, was Chair of the Cambridge University Geotechnical Society for the 2017/18 academic year, and has been on the SECED Young Members' Subcommittee since its inception.



### Sarah Tallett-Williams (Jacobs)

Sarah Tallett-Williams is a Geotechnical Earthquake Engineer at Jacobs, having completed her PhD at Imperial College London. Her research focussed on seismic site characterisation and probabilistic assessment of shear wave profiles, winning



a Santander Scholarship. In 2015, she took part in the EEFIT mission to Nepal and has two years industry experience with Atkins, predominantly modelling soil-structure interaction of embedded buildings. At Jacobs, she is now specialising in Probabilistic Seismic Hazard Assessment of low seismic regions. Sarah co-founded the SECED Young Members' Subcommittee.

### Manuela Daví (Jacobs)

Manuela Daví is a Chartered Principal Geotechnical Engineer working at Jacobs in London, specialised in seismic hazard assessment, geotechnical earthquake engineering and vibration impact assessment. She has worked on a wide range of international projects, including seismic design of major infrastructures, liquefaction assessments and probabilistic seismic hazard assessments of industrial sites, including nuclear facilities. Before moving to London, she worked as a Geotechnical Earthquake Engineer at Studio Geotecnico Italiano in Milan and previously spent few months at Istituto Nazionale di Geofisica e Vulcanologia in Milan, looking at 3D numerical simulation of seismic amplification of real sites due to topographic effect, as part of her MSc at Politecnico di Milano.



### Areti Koskosidi (Arup)

Areti is a Geotechnical Engineer currently working at Arup's seismic team in London. She holds a bachelor's degree in Civil Engineering from Aristotle University of Thessaloniki and an MSc in Soil Mechanics and Engineering Seismology from Imperial College.



During her career, she has been involved on many challenging projects in the UK and abroad mainly for the Energy and Nuclear industries. Her areas of expertise combine her geotechnical background with her developing interest in seismic hazard and risk. She mainly focuses on site characterisation, site response analysis (both deterministic and probabilistic using Monte Carlo Simulations to account for the soil variability) and earthquake induced liquefaction assessment. She also has a wide experience in probabilistic seismic hazard assessment (PSHA) studies as she has performed the seismic source and ground motion characterisation for many critical facilities around the globe.

### **Jorge Lopez (Arup)**

Jorge Lopez is a Seismic Structural Engineer working at Arup's International Development team in London. He has nine years of experience in seismic analysis and design of structures in various countries such as Armenia, Georgia, Rwanda, Nepal, Philippines and Peru, across different sectors. In 2016, Jorge joined the EEFIT mission to Ecuador, to assess the building and infrastructure damage from the earthquake.



### **Arash Nassirpour (University College London)**

Arash is a Teaching Fellow in Structural and Earthquake Engineering at UCL's Department of Civil Engineering and a member of EPICentre research group. He is currently the Programme Director of MSc Earthquake Engineering with Disaster Management and the Module Leader for Advanced Seismic Design of Structures at master's level. He holds a PhD in Structural & Earthquake Engineering, with an extensive experience on structural vulnerability and resilience.



### **Jason Pelekis (University of Cambridge)**

Jason is a PhD Candidate at the University of Cambridge, Department of Engineering. His expertise is on modelling the performance of unusual structures subjected to complicated types of loading. Jason's research is about the seismic behavior of different types of rocking systems, with a particular focus on the effects from soil-foundation and foundation-superstructure interactions. Previously, he read Civil Engineering at the University of Patras and then moved to Sheffield, where he addressed the fracture of plain concrete as part of his graduate studies. Currently based in Cambridge, Jason develops new computational tools that help with the probabilistic seismic assessment of rocking multi-storey buildings.



### **Marco Baiguera (University College London)**

Marco Baiguera is a Research Fellow in the Department of Civil, Geomatic and Environmental Engineering (CEGE) at University College



London. He is a member of EPICentre. His primary area of expertise is tsunami and cascading earthquake-tsunami vulnerability of coastal buildings and infrastructure. He has worked on a number of research and consultancy projects in countries highly prone to earthquake and tsunami, including Canada, Chile, Indonesia, and United States of America.

### **Stamatina Marinatou (Royal HaskoningDHV)**

Stamatina Marinatou is a Civil Engineer with a strong earthquake and geotechnical background. She holds an MSc (Dist) from Imperial College and has received several awards and scholarships. She is currently working at Royal HaskoningDHV, getting involved in international infrastructure projects. These range from seismic design of nuclear facilities in Europe to probabilistic seismic hazard studies in Asia Pacific. Stamatina will also participate in the PIANC UK National Group, providing support to the PIANC WG 225 for the revision of the seismic design guidelines.



### **Rachel Curtis (Office for Nuclear Regulation)**

Rachel Curtis is a Specialist Inspector (Nuclear Equivalence) at the Office for Nuclear Regulation (ONR) working in External Hazards. Rachel is currently undergoing training to become a fully suitably qualified and experienced Nuclear Safety Inspector. Since completing her MGeol in Geology from the University of Leicester, Rachel has been working within the nuclear industry. Rachel initially began work at ONR in 2015 on a secondment when she was a member of the nuclear graduates scheme. At ONR, Rachel is primarily involved in external hazards work on operating reactors and new build projects, including consideration of seismic hazards, meteorological hazards and coastal flood hazards.



### **Alex Shephard (WYG)**

Alex Shephard is an Engineering Director at WYG, where he leads the Civil and Structural engineering team in the nuclear sector. He has worked on a number of the major decommissioning projects in the UK and has a background in seismic design and assessment of structures. Alex has also worked on post-disaster recovery projects supporting



both UK Government and INGO projects. An example of this was when Alex worked with the charity Community Action Nepal (CAN), supporting their reconstruction programme following the devastation of the 2015 earthquakes. Alex has joined collaborative WYG and CAN missions to the region in 2017 and 2019 to provide specialist advice on seismic resilience aspects of the project.

### **Euan Stoddart (MMI Engineering)**

Dr Euan Stoddart is an Associate within Thornton Tomasetti's Applied Science Group. His primary area of expertise is structural dynamics operating within the defence, security and energy industries. This primarily involves analysis and assessment of structures and subsystems (such as buildings, glazing systems, pipework, nuclear facilities, dock systems, etc.) for a variety of extreme and accidental



loading conditions including seismic, blast and impact. Based in Warrington, in his free time Euan can often be found mountain biking in one of the nearby National Parks.

### **Socrates Angelides (University of Cambridge)**

Socrates Angelides is currently a PhD Student in the Department of Engineering, at the University of Cambridge. He joined Cambridge in 2016 as part of the Future Infrastructure and Built Environment CDT. His research focuses on the blast response of glazed façades, developing analytical models for the post-fracture response of laminated glass. He studied MEng Civil Engineering at Imperial College and worked for 3 years at DNVGL as a structural engineer in the Oil and Gas industry designing offshore steel structures.



# Updated Seismic Hazard Maps for the UK

**Hannah Besford**

*Institution of Civil Engineers, London, UK*

A team led by Dr Susanne Sargeant at the British Geological Survey has published the first updated seismic hazard maps in more than a decade, in work supported by ICE's Research & Development Enabling Fund.

The previous maps – developed by Musson & Sargeant in 2007 – are widely used by the UK's engineering sector to inform decisions relating to seismic hazard. The revised maps have been developed using some of the latest available data, knowledge and methods to support the UK's implementation of Eurocode 8, a European construction standard which covers the design of structures for earthquake resistance.

The new maps give guidance on the levels of ground shaking from earthquakes that might be expected in different parts of the country. The research confirms that earthquake hazard in the UK is low in global terms. It shows that the part of the UK with the highest seismic hazard is Snowdonia. This is due to the occurrence of significant earthquakes in this area throughout the historical record. The next most hazardous location is South Wales, which has also experienced notable earthquake activity over the last few hundred years. The hazard in areas like the Channel Islands, North Wales, the English-Wales border region, the Lake District and North West Scotland is slightly higher relative to other areas of the UK.

A Seismic hazard in terms of spectral acceleration (SA) at 0.2 s on rock for a 475 year return period is shown in Figure 1. The report highlights a need for further work to better understand the connection between the locations of recorded earthquakes and what is known about the tectonics of the UK.

The project team from the British Geological Survey and Edmund Booth, member of British Standards Institution sub-committee B/525/8 for Eurocode 8 (EC8): Earthquake resistant design of structures, discuss the possible applications of this research in in the latest [ICE blog](#).

Edmund said: "BGS's new and authoritative reassessment of the UK's seismicity has important implications for the consulting engineering community, particularly those involved with projects involving a higher than usual consequences of failure – the 'consequence class' in Eurocode language."

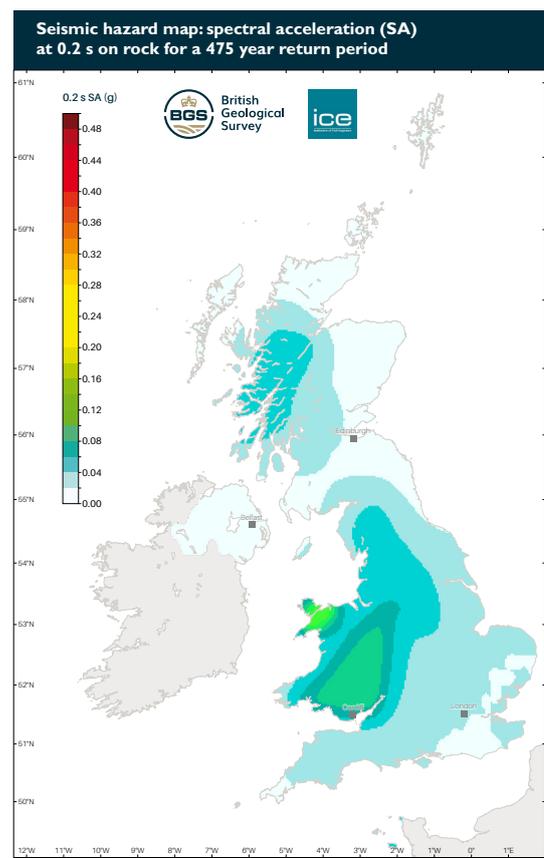
The maps are publicly available on the BGS website,

along with an open-access report describing the model used to obtain the results.

ICE's Research & Development Enabling Fund was set up more than 20 years ago to help civil engineers develop new and innovative ideas and tackle problems in design or construction. It is funded largely through member donations and backs projects of benefit to our membership and the wider engineering community, such as enabling more resilient infrastructure. It is open to any ICE member at any level of their career, including associate members.

The Fund's panel is particularly interested in receiving applications relating to ICE's themes of net-zero carbon, supporting the Sustainable Development Goals and ensuring social value in infrastructure.

To find out more about the RDE Fund and to apply, visit the website or email: [hannah.besford@ice.org.uk](mailto:hannah.besford@ice.org.uk).



**Figure 1: Seismic Hazard map: spectral acceleration (SA) at 0.2 s on rock for a 475 year return period.**

Editor's note: Ilaria Mosca and Susanne Sargeant will be delivering a talk on the new seismic hazard map for the UK in May. This talk will be advertised in a future issue and on the [SECED website](#)

# Notable Earthquakes

## July 2020 – December 2020

Reported by [British Geological Survey](#)

Issued by: Davie Galloway, British Geological Survey, January 2021.

Non British Earthquake Data supplied by: United States Geological Survey.

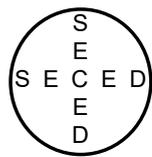
Year	Day	Mon	Time	Lat	Lon	Dep km	Magnitude			Location
			UTC				ML	Mb	Mw	
2020	01	JUL	04:21	56.21N	6.04W	10	1.7			MULL, ARGYLL & BUTE
2020	06	JUL	22:54	5.60S	110.69E	533			6.6	JAVA SEA
2020	10	JUL	14:36	51.58N	3.05W	20	1.6			ROGERSTONE, NEWPORT
2020	10	JUL	16:22	52.51N	1.52W	9	2.0			NUNEATON, WARWICKSHIRE
2020	17	JUL	02:50	7.84S	147.77E	73			7.0	PAPUA NEW GUINEA
One person killed, by a landslide in Northern and several houses damaged in Morobe										
2020	22	JUL	06:12	55.07N	158.60W	28			7.8	ALASKA PENINSULA
A tsunami with a maximum wave height of 24 cm reported at Sand Point, Alaska										
2020	29	JUL	23:15	60.90N	4.06E	10	3.1			NORTHERN NORTH SEA
2020	18	AUG	00:03	12.03N	124.13E	10			7.8	MASBATE, PHILIPPINES
Two people killed, 170 others injured, over 600 buildings destroyed or damaged and several roads and bridges damaged on Masbate.										
2020	18	AUG	22:23	4.32S	101.14E	22			6.8	SUMATRA, INDONESIA
2020	18	AUG	22:29	4.21S	101.24E	26			6.9	SUMATRA, INDONESIA
2020	21	AUG	04:09	6.71S	123.47E	624			6.9	BANDA SEA
2020	21	AUG	17:41	57.18N	5.77W	7	2.6			SKYE, HIGHLAND
Felt Isleornsay, Teangue, Kyleakin, Kylerhea, Breakish, Camuscross (Skye), Glenelg, Scallasaig, Ratagan, Bernera, Saraig, Nostie and Inverie (3 EMS).										
2020	28	AUG	10:19	56.52N	5.44W	4	1.0			BENDERLOCH, ARGYLL & BUTE
Felt Achnacroish (2 EMS)										
2020	30	AUG	18:10	51.59N	3.42W	2	1.3			TONYREFAIL, RHONDDA CT
Felt Tonyrefail (3 EMS).										
2020	30	AUG	21:20	0.78N	29.87W	10			6.5	CENTRAL MID-ATLANTIC RIDGE
2020	31	AUG	01:16	50.21N	4.13W	10	1.7			ENGLISH CHANNEL
2020	01	SEP	04:09	27.97S	71.31W	21			6.8	ATACAMA, CHILE
2020	01	SEP	21:09	27.92S	71.37W	16			6.5	ATACAMA, CHILE
2020	02	SEP	15:29	56.29N	3.75W	8	1.3			BLACKFORD, PERTH & KINROSS
Felt Blackford (3 EMS).										
2020	06	SEP	06:51	7.68N	37.15W	10			6.7	CENTRAL MID-ATLANTIC RIDGE
2020	08	SEP	08:45	51.93N	0.74W	10	3.5			LEIGHTON BUZZARD, BEDS

Year	Day	Mon	Time	Lat	Lon	Dep	Magnitude			Location
			UTC			km	ML	Mb	Mw	
2020	08	SEP	08:45	51.93N	0.74W	10	3.5			LEIGHTON BUZZARD, BEDS
Felt in many towns and villages in Bedfordshire, Buckinghamshire and Hertfordshire with the majority of reports coming from within around 25 km of the epicentre (6 EMS).										
2020	13	SEP	23:20	51.91N	0.71W	10	2.1			LEIGHTON BUZZARD, BEDS
Felt Leighton Buzzard and surrounding towns and villages with the majority of reports coming from the LU7 postcode area and from within 5 km of the epicentre (3 EMS).										
2020	16	SEP	02:39	49.08N	1.67W	14	2.8			JERSEY, CHANNEL ISLANDS
Felt Jersey and in several locations in the Manche Department, France (3 EMS).										
2020	18	SEP	21:43	0.93N	26.85W	10			6.9	CENTRAL MID-ATLANTIC RIDGE
2020	22	SEP	08:32	51.92N	0.68W	10	3.0			LEIGHTON BUZZARD, BEDS
Felt in many towns and villages in Bedfordshire and Buckinghamshire with the majority of reports coming from the LU7 postcode and from within around 20 km of the epicentre (4 EMS).										
2020	22	SEP	12:39	51.93N	0.71W	10	2.1			LEIGHTON BUZZARD, BEDS
Felt Leighton Buzzard and surrounding towns and villages with the majority of reports coming from the LU7 postcode area and from within 5 km of the epicentre (3 EMS).										
2020	24	SEP	11:11	53.12N	3.04W	7	1.7			HOPE, FLINTSHIRE
2020	28	SEP	04:54	56.27N	3.73W	3	2.3			BLACKFORD, PERTH & KINROSS
Felt Blackford, Auchterarder and Glendevon (3 EMS).										
2020	04	OCT	18:43	56.27N	3.75W	6	2.5			BLACKFORD, PERTH & KINROSS
Felt Blackford, Auchterarder, Braco, Aberuthven, Gleneagles and Glendevon (3 EMS).										
2020	04	OCT	21:01	56.29N	3.77W	3	0.8			BLACKFORD, PERTH & KINROSS
Felt Blackford (3 EMS).										
2020	05	OCT	03:25	53.55N	2.06E	10	2.6			SOUTHERN NORTH SEA
2020	06	OCT	05:16	61.49N	4.14E	10	2.2			NORWEGIAN SEA
2020	07	OCT	08:35	55.73N	3.21W	6	1.7			EDDLESTON, BORDERS
Felt Eddleston (2 EMS).										
2020	08	OCT	04:24	54.18N	0.53W	19	2.3			SHERBURN, NORTH YORKSHIRE
2020	10	OCT	06:23	56.28N	3.75W	5	1.5			BLACKFORD, PERTH & KINROSS
Felt Blackford and Auchterarder (3 EMS).										
2020	10	OCT	06:28	56.28N	3.75W	7	1.8			BLACKFORD, PERTH & KINROSS
Felt Blackford, Auchterarder, Dunning and Glendevon (3 EMS).										
2020	11	OCT	17:11	52.60N	4.18W	7	1.8			TONFANNAU, GWYNEDD
2020	13	OCT	21:59	53.55N	1.86W	11	1.2			MELTHAM, WEST YORKSHIRE
Felt Meltham and Marsden (3 EMS).										
2020	16	OCT	05:42	61.49N	3.29E	18	3.5			NORWEGIAN SEA
2020	18	OCT	10:14	56.27N	3.75W	3	0.8			BLACKFORD, PERTH & KINROSS
Felt Blackford (2 EMS).										

Year	Day	Mon	Time	Lat	Lon	Dep	Magnitude			Location
			UTC			km	ML	Mb	Mw	
2020	19	OCT	20:54	54.60N	159.63W	28			7.6	ALASKA PENINSULA
A tsunami with a maximum wave height of 76 cm reported at Chignik Bay, Alaska, of 70 cm reported at Sand Point, Alaska and of 21 cm reported at Crescent City, California.										
2020	21	OCT	02:49	53.35N	0.57W	24	2.5			SCAMPTON, LINCOLNSHIRE
Felt North Hykeham, RAF Digby, Lincoln, Market Rasen, Waddington, Scunthorpe, Collingham, Grimsby and Broughton (3 EMS).										
2020	24	OCT	12:58	55.10N	3.75W	11	2.0			DUMFRIES, D & G
Felt Dumfries, Kirkpatrick Durham, Thornhill, Dunscore, Lochmaben, Southwick, Kirkgunzeon, Amisfield, Castle Douglas, Torthorwald, Gilfoot, Mouswald, Lochanhead and New Galloway (3 EMS).										
2020	30	OCT	11:51	37.91N	26.78E	21			7.0	EASTERN AEGEAN SEA
At least 116 people killed, over 1,000 others injured and widespread damage occurred in the region where many buildings collapsed or were heavily damaged. The majority of casualties and damage occurred in Izmir Province, Turkey. Two people were also killed on the Greek island of Samos.										
2020	11	NOV	22:20	58.16N	1.09E	26	2.7			CENTRAL NORTH SEA
2020	16	NOV	06:31	52.64N	2.74W	9	1.2			DORRINGTON, SHROPSHIRE
Felt Stapleton (2 EMS).										
2020	17	NOV	14:38	61.34N	3.48E	16	2.5			NORWEGIAN SEA
2020	21	NOV	16:23	56.28N	3.76W	7	0.9			BLACKFORD, PERTH & KINROSS
Felt Blackford (2 EMS).										
2020	23	NOV	01:19	51.94N	2.96W	8	1.3			CLODOCK, HEREFORDSHIRE
Felt Clodock (2 EMS).										
2020	27	NOV	03:22	56.27N	3.75W	6	2.0			BLACKFORD, PERTH & KINROSS
Felt Blackford, Auchterarder, Aberuthven, Braco, Greenloaning, Gleneagles and Glendevon (3 EMS).										
2020	14	DEC	14:49	56.29N	3.75W	7	1.1			BLACKFORD, PERTH & KINROSS
Felt Blackford and Auchterarder (3 EMS).										
2020	19	DEC	00:26	51.31N	0.49E	2	1.8			AYLESFORD, KENT
2020	19	DEC	21:28	54.08N	0.86W	24	1.8			WESTOW, NORTH YORKSHIRE
2020	20	DEC	21:13	53.74N	1.43E	11	3.3			SOUTHERN NORTH SEA
2020	25	DEC	06:52	55.47N	5.95W	7	2.4			KINTYRE, ARGYLL & BUTE
Felt Kilchenzie and Macrihanish (3 EMS).										
2020	27	DEC	21:39	39.34S	74.99W	10			6.7	LOS RIOS, CHILE
2020	29	DEC	11:19	45.42N	16.26E	10			6.4	PETRINJA, CROATIA
Seven people killed, many others injured and considerable damage, including the collapse of many buildings, occurred in the region										
2020	31	DEC	11:18	55.66N	3.44W	7	1.9			SKIRLING, BORDERS
Felt Skirling, Biggar, Symington, Broughton, Stobo, Walston, Dolphinton, Elsrickle, West Linton, Blyth Bridge, Romannobridge, Carnwath and Peebles (3 EMS).										

# Forthcoming Events

## Evening Lectures



### **The March 2020 Zagreb Earthquake: A remote study by the Learning from Earthquakes Team**

Dr Emily So, Anamarija Babić, Helena Majetić, Valentina Putrino, Dr Diana Contreras Mojica, Professor Josip Atalić  
27 January 2021 (6:00 pm) , online event

**EEFIT**

### **Synopsis**

The magnitude 5.3 Zagreb earthquake occurred at 06:24 local time on Sunday 22 March 2020. Even though the event was minor in terms of its reported casualties and damage, its timing makes it noteworthy. At the time of the earthquake, Croatia – like most of Europe – was in partial lockdown in response to the COVID-19 pandemic. As part of the Learning from Earthquakes (LfE) project funded by the Engineering and Physical Sciences Research Council (EPSRC), this presentation summarises the findings and challenges of performing a remote earthquake reconnaissance mission using information gathered primarily from the internet and social media. We will also present how the newly developed LfE data collection app and spatial tools have been used in this mission.

### **Dr Emily So**

The reconnaissance team was led by Dr Emily So, one of the Principal Investigators on LfE. She has 20 years of experience in the field of earthquake engineering and specialises in casualty loss estimation. She is Reader in Architectural Engineering at the Department of Architecture at the University of Cambridge.

### **Anamarija Babić**

Anamarija Babić is a student from the Faculty of Civil Engineering at the University of Zagreb. She received a BSc in Civil Engineering in 2018 and is completing her MSc in Theory and Modelling of Structures. She was part of the field team deployed in Croatia.

### **Helena Majetić**

Helena Majetić is a student in the Faculty of Civil Engineering at the University of Zagreb. She received her BSc in Civil Engineering in 2018 and is completing her MSc in Theory and Modelling of Structures. She was part of the field team deployed in Croatia.

### **Valentina Putrino**

Valentina Putrino (UCL) is a researcher of the LfE project, within the UCL team. She is the main developer of the EEFIT Mobile App and coordinated the training of damage surveys for the team.

### **Dr Diana Contreras Mojica**

Dr Diana Contreras Mojica (Newcastle University) is a research associate on the LfE project and is in charge of coordinating the project's social media platforms. Her area of expertise is in assessing social vulnerability to natural hazards. She was in charge of collating and reviewing social media data, especially from Twitter, for the event.

### **Professor Josip Atalić**

Professor Josip Atalić from the Faculty of Civil Engineering at the University of Zagreb was the main coordinator of the national post-earthquake damage assessments. Prof Atalić organised the data collection and the analyses of surveys. He and his team were also responsible for drafting the Law on reconstruction (and all additional documents related to it) for the Croatian government after the earthquake. He will join the LfE team on the panel for discussions following the main presentation.

### **Further information**

This evening meeting is jointly organised by EEFIT and SECED. The meeting will be chaired by Joshua Macabuag (EEFIT, SARAID) and Andreas Nielsen (SECED, Atkins). Non-members of the society are welcome to attend. Attendance at the meeting is free. The meeting will take place online via Microsoft Teams.



### **Liquefaction response of monopile-supported offshore wind structures**

Amir Kaynia

24 February 2021 (6:00 pm) , online event

### **Synopsis**

This evening meeting will address the earthquake response of offshore wind structures with focus on response of monopile-supported wind turbines in liquefiable soil. The use of SaniSand constitutive model implemented in FLAC<sub>3D</sub> is presented by verification of the model against centrifuge test data. The model is then used to perform a series of dynamic analyses to highlight the main characteristics of the response. Different combinations of lateral environmental loads together with earthquake shaking are presented. By comparing the results with the case of no environmental loads, it is shown how the permanent tilt induced by the earthquake is affected by the concurrent environmental loads. Application of the model in large subsea structures which are affected only by earthquake shaking and liquefaction is also demonstrated.

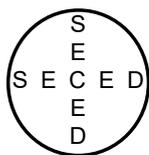
### **Amir Kaynia**

Amir Kaynia has more than 30 years of experience in geotechnical, structural and earthquake engineering. His

major fields of work include dynamic soil-structure interaction, geotechnical earthquake engineering and vibration from high-speed railways. He received his MSc and PhD from MIT and is currently Technical Expert, Vibration and Earthquake Engineering at NGI, and Adjunct Professor of Structural Engineering at Norwegian University of Science and Technology. Amir has published more than 190 papers in peer reviewed journals and international conference proceedings, has authored 6 book chapters, and has held numerous keynote lectures worldwide. He has led major international design projects onshore and offshore and has coordinated several research projects funded by the European Commission and the Norwegian Research Council. He is chairman of the Norwegian Earthquake Committee for national provisions in Eurocode 8 and is member of PT4 for revision of Part 5 of Eurocode 8. Amir is member of the Editorial Board of the journals Soil Dynamics & Earthquake Engineering and Transportation Geotechnics.

### Further Information

This evening meeting will be chaired by Barnali Ghosh (Mott MacDonald). Non-members of the society are welcome to attend. Attendance at the meeting is free. The meeting will take place online via Microsoft Teams.



### Seismological, structural and geotechnical aspects of the 2020 Samos (Aegean Sea) earthquake

Anastasia Kiratzi, Elizabeth Vintzileou and Katerina Ziotopoulou  
31 March 2021 (6:00 pm) , online event

### Synopsis

The 30 October 2020 M<sub>7.0</sub> Samos (Kuşadasi Gulf, Izmir) earthquake reportedly caused two fatalities and 19 minor injuries at Samos Island, while in Western Turkey, the effects of the event were more severe, with 115 fatalities, over 1,030 injuries and structural damage that included at least six collapses in Izmir, approximately 70 km away from the epicentre. This webinar will give an overview of this notable event based on recent analysis of seismological data, as well as field reconnaissance observations. The earthquake ruptured a north dipping normal fault, projecting offshore, very close to the northern coast of Samos Island. Following the main event, a cascade of M<sub>6+</sub> earthquakes occurred in the Aegean Sea, highlighting the significant earthquake risk imposed on urban areas from unknown and unmapped offshore faults. The typology of buildings affected in the Samos region were mostly of plain masonry with few occurrences of RC structures. Typical damage patterns will be discussed and qualitatively interpreted in the context of their typology, dimensions and the quality of their

construction. The earthquake also led to some landslides, evidence of liquefaction, lateral spreading and damage to quay walls in ports on the northern side of Samos Island. Despite the proximity to the fault, and the significant amplitude / duration of shaking, the liquefaction phenomena were not pervasive, while no liquefaction was observed in and around Izmir. Both Samos and Izmir Bay yielded interesting observations regarding site and topography effects.

### Professor Anastasia Kiratzi

Anastasia Kiratzi is Professor of Seismology at Aristotle University of Thessaloniki, specializing in earthquake source mechanics and Engineering Seismology. Educated in Greece, UK and USA she has collaborated with research groups across the world, coordinating a variety of projects. She is acting vice-chair of ORFEUS, associate editor of Journal of Seismology, member of the editorial board of Tectonophysics, and Member of Expert Advisory Panels on seismic risk in Greece and abroad. She has supervised PhD and MSc students and holds a strong record of publication in high-impact journals.

### Professor Elizabeth Vintzileou

Elizabeth Vintzileou is Professor of Reinforced Concrete and Masonry Structures at National Technical University of Athens (NTUA), specializing in seismic behaviour and design of RC and masonry structures, pre- and post-earthquake assessment and rehabilitation. She has coordinated/is coordinating more than forty research projects. She is member of the Central Archaeological Council and the Central Council for Contemporary and Modern Monuments at the Hellenic Ministry of Culture.

### Professor Katerina Ziotopoulou

Katerina Ziotopoulou is an Assistant Professor in Civil and Environmental Engineering at the University of California (UC) at Davis since 2016. She received her PhD and MSc from UC Davis, and her undergraduate Diploma from NTUA, Greece. Her research focuses on numerically and experimentally studying ground failure due to earthquake-induced liquefaction and its mitigation. Her work is funded from NSF, PG&E, the Center for Biomediated and Bioinspired Geotechnics, Caltrans, and the California Strong Motion Instrumentation Program. She is the recipient of the 2021 Arthur Casagrande Professional Development Award of ASCE.

### Further Information

This evening meeting is chaired by David Hawtorn (BGS). Non-members of the society are welcome to attend. Attendance at the meeting is free. The meeting will take place online via Microsoft Teams.

For up-to-date details and further information on events organised by SECED, visit the [SECED website](https://www.seced.org.uk) or contact Shelly-Ann Russell (020 7665 2147, [societyevents@ice.org.uk](mailto:societyevents@ice.org.uk))

# SECED Logo competition: winner announced!

We are delighted to announce that Joe Gervin from Ireland is the winner of the SECED logo competition.

We would like to thank everyone who submitted one or more entries. We received many interesting designs, and it was not an easy task to choose the winner. In fact, it was a very close race between the finalists in the competition. We would also like to give a special commendation to three

entries submitted by young people under the age of 18: all three were very accomplished designs. However, in the end the Committee felt that Joe's entry was the best design.

There are eight official versions of the new logo, as shown in Figure 2. The new logo is already live on the [SECED web-site](#) and will be adopted in the next issue of the SECED Newsletter.



Figure 2: New SECED logo including the eighth official versions (grey and colour scales)

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## SECED Newsletter

The SECED Newsletter is published quarterly. Previous issues of the SECED Newsletter are available [online](#). All contributions of relevance to the members of the Society are welcome.

Manuscripts should be sent by email. Diagrams, pictures and text should be attached in separate electronic files. Hand-drawn diagrams should be scanned in high resolution so as to be suitable for digital reproduction. Photographs should likewise be submitted in high resolution. Colour images are welcome.

Articles published in the SECED Newsletter are not peer-reviewed; the views and opinions within published articles represent those of the Authors and do not necessarily reflect the official policy or position of SECED.

Please contact the Editor of the Newsletter, [Damian Grant](#), for further details. This edition of the Newsletter was co-edited by [Manuela Daví](#).