Tall Building Fire Safety Network

2nd International Tall Building Fire Safety Conference

University of Greenwich, London

17 – 20th June 2014

Conference Programme and Delegate Information V9

Tall Buildings fire safety network

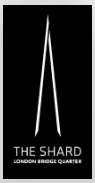
UNIVERSITY of GREENWICH

HORIZONSCAN

RISK - RESILIENCE - READINESS

Contents:

1. Conference Speakers, Sponsors and Supporters



2. Tall Building Fire Safety Network

Mission Statement:

"To collectively advance the understanding of fire risk management in tall buildings, during design, construction, occupation and firefighting operations. This will be achieved by group scrutiny of available research data, relevant innovative products and development of a guidance document for fire safety in tall buildings".

Terms of Reference:

1. Membership of the group will be formed primarily by staff representing owner/management of tall buildings;

2. Membership of the group is also open to key stakeholders involved in fire safety within tall buildings;

3. The group will meet twice a year at suitable venues convenient to the membership;

4. The group will be administered by Horizonscan (organisation of meetings speakers, minutes, etc.);

5. Membership of the group is voluntary, and any expenses incurred are down to individual members;

Steering Committee:

Chair: Paul Coster (Canary Wharf)
Secretary: Russ Timpson (Horizonscan)

Prof Ed Galea (University of Greenwich), Guy Foster (London Fire Brigade), Tom Gilbert (BB7), Curtis Massey (Disaster Inc. US)

3. Conference Agenda

Tuesday 17th June

08:45 Delegates to be seated in the Howe Lecture Theatre

09:00 Welcome – Paul Coster, Chair of the Tall Building Fire Safety Network

09:10 Official opening – Ron Dobson, Commissioner for Fire, London

09:20 Keynote – Jake Pauls, 'Situation Awareness in Tall Building Evacuations'

(note: all presentation timings include a 5 minute Q&A session at the end)

09:50 Brian Meacham – New SFPE Guidance on Tall Building Fire Safety

10:15 Jim Glocking – External Fire Spread on Tall Buildings

10:40 Nathan Wittasek – Tall Building Life Safety System Engineering

11:05 Tea & Coffee Break

11:30 Justin Francis – Tall Building Firefighting, the Australian Experience

11:25 Yukihisa Kuriyama – Firefighter Fatigue in Tall Buildings, Japan

11:50 Panel Discussion

12:10 Lunch (demonstration of Evacuator will take place during lunch break)

13:10 Lite 4 Life product overview – Andy Cunningham

13:25 Evacuator product overview – Eugene Verstegen

13:40 Advanced Detection – Aston Bowles

14:00 Workshop 1: Calculating Fire Insurance Premiums for Tall Buildings
Chaired by Russ Timpson

Workshop 2: Competency of Fire Risk Assessors for Tall Buildings
Chaired by Tom Gilbert

15:00 Tea & Coffee Break

15:30 Workshop 3: Shirley Towers Tall Building Fire Case Study
Chaired by Chris Stephens and Mick Johns

16:30 Conference day 1 closes

19:30 Networking Social Event (see Social Programme)

Wednesday 18th June

08:45 Delegates to be seated in the Howe Lecture Theatre

09:00 Welcome Back – Guy Foster, London Fire Brigade

09:10 Day 2 opening – Graham Ellicott, FIA

09:20 Keynote – Prof. Ed Galea, Tall Building Evacuation

(note: all presentation timings include a 5 minute Q&A session at the end)

09:50 Curtis Massey – Tall Building Firefighting

10:15 Ben Bradford – Tall Building Fire Safety Management

10:40 Karen Boyce – Evacuation of mobility impaired occupants from Tall Buildings

11:05 Tea & Coffee Break

11:30 Axel Jönsson – Tall Building Fire Safety Research from Lund University

11:25 Angus Law – Tall Building Fire Engineering, Arup Fire

11:50 Jerry Davis – The Impact of Posture on Evacuation Speed

12:20 Lunch

13:10 Massey Tall Building Fire Safety App - demonstration

13:40 Tall Building Fire Safety Management Course – Russ Timpson

13:55 Workshop 4: Evacuation Modelling
Chaired by Prof. Ed Galea

Workshop 5: Firefighting in Tall Buildings
Chaired by Guy Foster

15:00 Tea & Coffee Break

15:30 Workshop 6: Developing Fire Strategies for Tall Buildings
Chaired by Jim Golt

16:30 Conference day 2 closes

19:00 Gala Dinner (see social programme)

Thursday 19th June

08:45 Delegates to be seated in the Howe Lecture Theatre

09:00 Welcome Back – Tom Gilbert, Steering Committee

09:10 Day 3 opening – Jonathan O'Neil, FPA

09:20 Keynote – James Colgate, Tall Building Fire Safety in New York

(note: all presentation timings include a 5 minute Q&A session at the end)

09:50 Mark Redding – Tall Building Fire Insurance Calculations

10:15 Anne Dederichs – Tall Building Fire Research, Denmark

10:40 Marja-Liisa Siikonen – Tall Building Lift Evacuation Research

11:05 Tea & Coffee Break

11:30 Peter Cowup – Tall Building Firefighting

11:55 Jun Ho Choi – Tall Building Fire Safety Research, Korea

12:20 Panel Discussion

12:30 Lunch

13:10 Transport leaves for FIREX exhibition at the Excel Centre

Arrive FIREX – VIP Access

16:30 Conference day 3 closes

19:00 Free Evening

Friday 20th June – Technical Fire Safety Tours

Note: To attend any of the Tall Building Fire Safety Technical Tours:

1. You must have photographic ID (carried at all times)
2. Be in possession of a conference Tour Pass (issued at registration)
3. Wear suitable clothing (plant rooms, staircases, etc.)
4. Only take photographs with permission

Those registered for the Shard Tour:

07:15 Register at the Shard reception area

0730 – 0800 L68 The View From The Shard

0800 – 0830 L32 to view the Restaurant's Atrium & L27 to see a Cat A Office Floor

0830 – 0900 L03 to meet Head of Security; see fire grab plans; tea / coffee / pastries; questions

0900 – 0930 B2 to have tour of the Security Control Room / Fire Control Centre

Those registered for the BT Tower Tour:

For the visit for any females they will need trousers and sensible flat shoes with a defined heel (no high heels) as there will be steep stairs to climb and small doorways to negotiate photographs can be taken in certain areas and the hosts will indicate where photographs cannot be taken. They will definitely need a camera when the revolving floor on T34 is operated whilst they enjoy the view with their tea/coffee and biscuits – Bernie Cosh, BT.

1000 – 1030: After reception /security – T34 (revolving floor) tea and biscuits

1030 – 1130: Old frame rooms/ fire alarm systems/BIC Security (grab plans) Etc.

1130 – 1200: Catacombs / Pyramid history / Pump room / Engine room / HV room.

1200 – 1230: Showcase – Karen Ahern

4. Speaker Profiles (remaining speakers will be added as they arrive)

Jake Pauls helped initiate a new research program in building use studies in 1967 at NRC Canada, conducting research on people's movement in and around buildings for 20 years, beginning with detailed documentation of tall office building evacuations. This was followed by 27 years of international research, safety standards development, consulting and public health advocacy from a Maryland, USA, base until January 2014 when his office was moved to Toronto, Canada. A Certified Professional Ergonomist, his advisory work spans a wide range of settings plus events (from Olympic Games and world expositions to falls by individuals on stairways) and it bridges among ergonomics, public health, engineering and the development, adoption and enforcement of safety codes plus standards for built environment usability and safety. He is still active in the field of tall building safety, as one of the longest-serving members of NFPA's High Rise Building Safety Advisory Committee.

Justin Francis - 19 years of experience within the Queensland Fire and Emergency Service has seen a significant amount of experience gained whilst working as an operational Station Officer within the Central Business District of Brisbane, Australia. This experience includes performing the role of incident controller at many incidents in tall buildings, 4 years of working within the Community Safety field focussed on Building Approvals of significant building developments, liaison with private industry and compliance and prosecution. This combined knowledge highlighted a shortfall in fire fighter skills and prompted establishment of training programs aimed at strengthening fire fighter knowledge on Special Fire Services within the built environment. My formal qualifications, a Bachelor Degree of Emergency Management from Charles Sturt University have assisted to extend my knowledge outside of my organisation. My current work area is operationally based and is broad in area, ranging from Technical Rescue through to bush fire management in the field of Bush Fire Behaviour Analysis.

Karen Boyce - Dr Karen Boyce has been a member of the FireSERT research team, working in the area of human behaviour in fire, at the University of Ulster for 25 years. Her research has focussed primarily on the provision of data and information for fire safety engineering design in relation to the behaviour and movement of occupants during evacuation and her Phd research focussed on the capabilities of people with disabilities to evacuate. Recent projects include an EPSRC (UK Engineering and Physical Science Research Council) funded investigation into the behaviours of persons evacuating the World Trade Centre on 9/11, the physical and psychological aspects of merging behaviour on stairs, attitudes of people with disabilities to evacuation options and the circumstances surrounding the deaths of vulnerable populations from fire in dwellings. She is the author of over 50 research publications, and current Chair of the International Symposium Human Behaviour in Fire series. She is currently guest editor of a special edition of Fire and Materials (human behaviour in fire) to be published in 2013 and acts as academic referee for a number of International Journals in the field of fire science and related areas. She is a member of the Editorial Board of the recently established open access journal 'Fire Science Reviews', and is currently co-writing a new chapter for the Society of Fire Protection Engineers Fire Engineering Handbook 4th Edition related to human behaviour data for use in fire safety engineering.

Dr. Marja-Liisa Siikonen currently works as Director – People Flow Planning, in KONE Corporation, Finland. She is responsible for the traffic planning competence in KONE to guarantee fluent people flow in buildings. She received her M.Sc. in technical physics from the Helsinki University of Technology. Later on she obtained the degree of Licentiate of Technology, and the degree of Doctor of Technology in applied mathematics from the Helsinki University of Technology. She has published numerous articles and patents in the field of elevator control systems, simulation, and people flow in buildings. She is a member of FORS and ELA, and participates in ISO, CIBSE, and CTBUH working groups.

Curtis Massey is the founder of Massey Enterprises, a leading fire/life safety firm that creates disaster pre-plans and mobile technology solutions for buildings across North America. MEI's clients include most of the largest real estate firms and the highest profile assets throughout 70 cities. A world-renowned fire service instructor, Curtis trains many of the largest city fire departments in advanced high-rise operations. He is a 20-year veteran of the fire service, and a frequent lecturer at fire conferences and real estate organization meetings, including BOMA. Curtis was a first responder to the World Trade Center collapse on 9/11 and New Orleans during the aftermath of Hurricane Katrina. He is recognized within media circles as an authority in fire safety, and has been interviewed numerous times on TV and in print.

Kristin Andree is a part time PhD student at Department of Fire Safety Engineering, Lund University, Sweden, on the rest of her time she is working as a fire safety consultant in Stockholm. Her PhD is in the area of human behavior in fire, focusing on evacuation strategies when traditional evacuation routes eg. staircases not are used.

Ben Bradford Founder and Managing Director of BB7 Fire Risk + Resilience, voted by IFSEC Global to be among the IFSEC 40 most influential people in fire and security, Ben holds duel professional status as both a Chartered Engineer and Chartered Surveyor. He is the Chairman of the Fire Industry Associations (FIA) Professional Standards Working Group and also a member of both the Fire Risk Assessment and Fire Engineering Councils. Chairman of the Institution of Fire Engineers (London Branch) Marketing and Events Committee and member of the IFE Competency and Ethics Committee. Ben also sits on the Royal Institution of Chartered Surveyors (Building Control) Professional Group Board and is the principle author of PAS 7: 2013 Fire Risk Management System Requirements for and on behalf of British Standards Institution. Prior to founding BB7 he gained national and international experience as a Director for a large independent Fire Engineering Consultancy, and has worked/presented in rapidly emerging countries such as Vietnam, Dubai, Abu Dhabi, Libya, Qatar, and Nigeria. He gained a sound understanding of building pathology, Construction, Building Legislation, Codes and Standards whilst working as a Chartered Building Control Surveyor in London and the South East. During his career in Building Control he gained a BSc Hon's in Building Surveying, an MSc in Building Engineering which incorporated Evacuation Modelling and he also gained an AMBA Accredited MBA via Kent Business School. In May 2014 he will become Vice-President of the Chartered Association of Building Engineers

Professor Ed Galea is the founding director of the Fire Safety Engineering Group (FSEG) of the University of Greenwich in London where he has worked in the area of Computational Fire Engineering (CFE) research since 1986. FSEG are developers of the EXODUS suite of evacuation and crowd dynamics software and the SMARTFIRE fire simulation software, which have users in 35 countries around the world. His personal research interests include human behaviour in emergency evacuation situations, crowd dynamics, evacuation and crowd dynamics simulation, fire dynamics and CFD fire simulation. His research has applications to the building, aviation, maritime and rail industries.

He is the author of over 300 academic and professional publications, the vice chair of the International Association of Fire Safety Science and serves on a number of standards committees concerned with fire and evacuation for organisations such as; IMO, ISO, BSI and the SFPE Task Group on Human Behaviour in Fire. He has served on several major Inquires and legal cases as an expert in fire and evacuation including: the Paddington Rail Crash, the Swiss Air MD11 crash, and the Admiral Duncan Pub bombing. He has successfully supervised 20 PhD students in fire and evacuation related studies. He is a Guest Professor at Ghent University Belgium and the Institut Supérieur des Matériaux et Mécaniques Avancés (ISMANS), Le Mans, France where he teaches on Fire Safety Engineering MSc courses. He has won a number of awards for his work including; 2001 British Computer Society Gold Medal, 2002 Queen's Anniversary prize, 2006 Royal Aeronautical Society Gold Award; 2008 SFPE Jack Bono Award, 2010 Royal Aeronautical Society Bronze Award and the 2014 The Guardian University Award for Research Impact. He is an associate editor of the "Royal Aeronautical Journal" and open access journal 'Fire Science Reviews'.

Nathan Wittasek has twenty years of experience working in the fire protection and regulatory arenas. Nate brings a practical approach to the fire protection engineering field that reflects his diverse training and experiences in academia, codes consulting, fire protection engineering, sustainable design, and the fire service. His experience includes failure analysis, fire engineering, systems design and building codes consulting for commercial and infrastructure projects in North America, Asia, and the Middle East. Nate has specialized in fire life safety systems and approaches that are used in tall buildings, and is currently involved with several tall buildings projects in various stages of design and construction.

Nate is a registered fire protection engineer in the state of California, sits on the fire safety committee for the Council on Tall Buildings and Urban Habitat, and is a regular instructor for the American Institute of Architects, California Polytechnic University and the UCLA Extension, where he focuses on regulatory issues, building, fire and zoning codes as well as accessibility.

Neal Butterworth is a graduate from the University of Sheffield with an MPhil in structural fire engineering. He is a chartered fire engineer and has 16 years of experience of fire engineering in the construction industry. He is currently the technical and innovations leader for Arup's UK, Middle East and Africa fire engineering team.

Neal has helped develop fire safety solutions for several high rise buildings in the UK, Middle East and Africa and has written technical and journal papers on tall building fire strategies.

Brian Meacham is an Associate Professor in the Department of Fire Protection Engineering at Worcester Polytechnic Institute in the USA. He is internationally recognized as an authority on risk-informed performance-based approaches to engineering and regulation. He has undertaken research, participated in the development of guidance documents, authored more than 200 publications, given more than 200 presentations, consulted to governments, taught university courses and graduated PhD students in these subject areas.

Prior to joining WPI in January 2008, he was a Principal at Arup, where he led the global Risk Consulting practice and Risk & Security Business in the USA. Prior to that he served as Technical Director and Research Director for the Society of Fire Protection Engineers (SFPE), practiced as a fire safety engineering consultant in the USA and Europe, and worked as an engineering professional and manager at an international fire detection and alarm system manufacturer.

As a member of several national and international codes, standards and guidance development committees, Brian helps facilitate the transfer of knowledge between research, practitioners and policy-makers. He is Chair of the *NFPA Technical Committee on Fire Risk Assessment Methods*, Member of the *SFPE Standards Committee on Design Fire Scenarios*, Member of the SFPE Engineering Task Groups on *Fire Safety in Very Tall Buildings* and on *Fire Risk Assessment*, and Member of the US TAG to *ISO TC92 SC4 – Fire Safety Engineering*. Brian is a Member of the Board of Directors of the Society of Fire Protection Engineers and of the Managing Committee of the International Association for Fire Safety Science. Brian is a licensed Professional Engineer in Connecticut and Massachusetts, a Chartered Engineer and Fellow of the Institution of Fire Engineers, and a Fellow of the Society of Fire Protection Engineers.

Anne Dederichs is associate professor at the Department of Civil Engineering at the Technical University of Denmark. She is head of studies for Master of Fire Safety since 2009. Anne Dederichs has a PhD in soot modelling from Lund University and works now with evacuation with a focus on safety of the vulnerable part of the population.

Mark Redding has over 20 years' experience in the insurance industry advising commercial and corporate clients on all aspects of property and business interruption risk. Mark gained considerable experience of high rise office buildings working in Allianz Global's financial sector where clients included Canary Wharf and Deutsche Bank and has more recently been closely involved in developing Mitsui Sumitomo's approach to the assessment and underwriting of high rise buildings. Mark sits on a number of insurance related working groups where industry knowledge is shared and standards developed. With less academic credentials than some of his fellow presenters Mark would describe his approach to the subject of high rise buildings as experience-based and practical.

James Peabody Colgate serves at the Assistant Commissioner for Technical Affairs and Code Development for the New York City Department of Buildings. The Department is responsible for setting local construction standards, enforcing the Building Code and Zoning Resolution, and regulating the construction trades. The Department has jurisdiction over the City's 975,000 buildings. Mr. Colgate leads a team of professionals to ensure compliance with construction codes, zoning regulations and other relevant laws. He is a member of the International Building Code (IBC) – General Code Development Committee, and a member, American Society of Structural Engineers (ASCE) 24 Committee for Flood Resistant Design and Construction Standards.

After 9/11, Mr. Colgate drafted legislation implementing the recommendations of the New York City World Trade Center Building Code Task Force and standards for the installation of photoluminescent exit markings. Currently, manages the periodic updates to the New York City construction codes based on the model codes published by the International Code Council.

Peter Cowup is in his 32nd year of service with London Fire Brigade and is currently Deputy Assistant Commissioner, Acting Head of Operational Procedures. Peter's role is to provide leadership, guidance and support to a department that holds the policy lead for LFB's firefighting, rescue, hazardous materials, respiratory protective equipment and incident communications capabilities. In practise, the department produces the risk assessments, policies and procedures and training and equipment specifications which underpin and help to deliver safe and effective operational response in these areas. Peter also represents LFB in several national forums, such as USAR and the CLG/CFRA working group responsible for producing national generic risk assessments (GRAs).

Peter attends and provides support to larger operational incidents at both Silver and Gold levels of command. During his career, Peter has attended and taken command roles at a wide range of significant operational incidents, including a number of major fires (several of which were in high rise buildings), a major incident at Chancery Lane LUL station and at Kings Cross during the 7/7 London bombings. More recently, Peter attended the helicopter crash in Vauxhall as LFB's principal media spokesperson.

Through his work with CLG/CFRA, Peter took on the role of principal author for the revised GRA that covers firefighting in high rise buildings. This was a significant project, which run over three years and involved close working across the UK fire service and with stakeholders such as trades unions and the Health and Safety Executive. The GRA was published in February 2014 and provides UK fire services with information on a range of hazards associated with high rise fires and guidance on how these can be controlled through measures such as those associated with planning, training and command and control.

Angus Law Angus Law is a structural fire engineering specialist with Ove Arup and Partners. Angus obtained his PhD in Fire Safety Engineering at the University of Edinburgh in 2010. He has since worked on a number of tall building projects around the UK, developing fire strategies and analysing the response of structures to extreme fire events.

He has pioneered the use of non-uniform design fires in structural fire engineering design of tall buildings, and published widely on the subject of structural fire design. Within the UK, Angus leads Arup's fire engineering approach to tall timber construction.

Jerry Davis is a faculty member in the Industrial & Systems Engineering Department (Auburn University, AL, USA) and Director of the NIOSH supported Occupational Safety & Ergonomics (OS&E) graduate program. He is a professional member of the American Society of Safety Engineers (ASSE), who teaches safety, ergonomics, and human factors engineering courses in both the undergraduate and graduate curriculums.

He is board certified in safety and ergonomics and pursues an active research agenda in human performance and evacuation topics. Jerry is a retired United States Naval Officer, having served over twenty years in the nuclear submarine fleet, and lives in Opelika, Alabama

Jim Glockling is the Technical Director of the Fire Protection Association. Originally a Chemical Engineer, he did his PhD in Nuclear Engineering at the UK Atomic Energy Authority before undertaking a post doctorate in fire extinguishing technologies. He has worked as a university lecturer in Chemical Engineering & Fire Engineering and as a Forensic Fire Investigator. Immediately prior to joining the FPA he was the Associate Director of the Special Projects Group at LPC and then BRE. Jim continues to undertake research into fire protection with his sizeable team of experts with particular emphasis on solving high risk detection / suppression issues and has worked extensively with the ABI, major UK insurers and the MOD. He has responsibility for the annual UK insurer research budget which is administered through the RISCAuthority scheme.

Axel Jönsson graduated with a Msc in Risk Management and a Bsc in Fire Protection Engineering from Lund university in 2011. During 2011 I worked as a research assistant at Lund University with evacuation in high-rise buildings, and especially evacuees reactions to elevator evacuation, as my main focus. Since 2012 I've been a fire protection consultant at Brandskyddslaget, which is the leading independent fire consultant agency in Sweden.

Dr. Yukihisa Kuriyama is a professor of the University of Tokyo. He is working for Socio-Artifactology division of RACE (Research into Artifacts, Center for Engineering) mainly to secure infrastructure. His back ground is mechanical engineering and he worked long years for crash safety and noise and vibration of automobiles. He is a new comer to fire safety since 2011 applying his knowledge and technology of signal processing and biomechanics to fire fighters' fatigue.

Assessment of a fire fighter's fatigue by spectrum analysis of heart beat measurement is similar to prognostic health monitoring of a bridge by operational modal analysis based on vibration measurement. Study on fire fighters' fatigue is collaboration with Yokohama Fire Bureau and associate professor Oka of Yokohama National University.

Prof Jun-Ho Choi is an assistant professor working for Department of Fire Protection Engineering of Pukyong National University in Busan, South Korea since March 2012. He is currently supervising one PhD student and ten Master students in fire and evacuation field. Originally he used to study architecture and built environment at Kyungpook National University in Daegu but he turned over to research fire & evacuation safety engineering just after watching the scene of Daegu Subway Fire Disaster in 2003. He and his colleagues investigated human behaviour characteristics during the subway fire with his supervisor, Prof Won-Hwa Hong.

His research interests include human behaviour including response and psychology in emergency situations, evacuation modelling, crowd modelling, pedestrian dynamics, and ICT & NT applied disaster prevention systems. Especially his PhD dissertation is about evacuation behaviours modelling from Korean high-rise buliding dataset based on some full-scale experiments and computer simulations. He started to work in close collaboration with Prof Edwin Galea and his research group (FSEG) as a visiting scholar since 2012.

He is also a life member of International Association of Fire Safety Science (IAFSS), Coucil on Tall Buildings and Urban Habitat (CTBUH), International Building Performance Simulation Association (IBPSA), Korea Institute of Fire Science & Engineering (KIFSE), and Architectural Institute of Korea (AIK), Korean Society of Hazard Mitigation (KOSHAM) etc. He is the author of about 90 academic research publications including international or Korean journal papers, and international or domestic conference proceedings. He has won commendation from the minister of Ministry of Security and Public Administration of Korea last year, and Best Paper Award eight times, and the award for best architectural design twice.

5. Tall Building Delegate Fire Safety Technical Tours
Friday 20th June

BT Tower is a communications tower located in Fitzrovia, London, owned by BT Group. It has been previously known as the Post Office Tower, the London Telecom Tower and the British Telecom Tower. The main structure is 177 metres (581 ft) tall, with a further section of aerial rigging bringing the total height to 191 metres (627 ft).

In 1962, while still under construction, the BT Tower overtook St Paul's Cathedral to become the tallest building in London. Upon completion it overtook the Millbank Tower (which had been constructed faster) to once again become the tallest building in both London and the United Kingdom, titles it held until 1980, when it in turn was overtaken by the NatWest Tower (Now Tower 42).

The tower was originally designed to be just 111 metres (364 ft), and its foundations are sunk down through 53 metres of London clay and are formed of a concrete raft 27 metres square, a metre thick, reinforced with six layers of cables on top of which sits a reinforced concrete pyramid.

Tower 42 is the second-tallest skyscraper in the City of London and the seventh tallest in Greater London. Its original name was the National Westminster Tower, having been built to house the National Westminster Bank's international division.

The tower, designed by Richard Seifert and engineered by Pell Frischmann, is located at 25 Old Broad Street. It was built by John Mowlem & Co between 1971 and 1980, first occupied in 1980, and formally opened on 11 June 1981 by Queen Elizabeth II.

The construction cost was £72 million (approximately £261 million today). It is 183 metres (600 ft) high, which made it the tallest building in the United Kingdom until the topping out of One Canada Square at Canary Wharf in 1990. It held the status of tallest building in the City of London for 30 years, until it was surpassed by the Heron Tower in December 2009.

The building today is multi-tenanted and comprises Grade A office space and restaurant facilities.

1 Canada Square is a skyscraper in Canary Wharf, London. It was the tallest building in the United Kingdom from 1990 to 2010, standing at 235 metres (770 ft) above ground level and containing 50 storeys.

One Canada Square was designed by principal architect Cesar Pelli, who based the design and shape mainly on the World Financial Center and the Elizabeth Tower. One of the predominant features of the building is the pyramid roof which contains a flashing aircraft warning light, a rare feature for buildings in the United Kingdom. The distinctive pyramid pinnacle is at 240 metres (800 ft) above sea level.

The tower has thirty two lifts for tenants to use, where 8 lifts serve roughly ten floors of the building. All tenant passenger lifts serve the ground floor. In addition there are 2 firemen's lifts which serve all floors in the building. These have colour designations with blue being in the northeast core of the building and green being in the southwest.

The Shard also referred to as the Shard of Glass, Shard London Bridge and formerly London Bridge Tower, is an 87-storey skyscraper in London that forms part of the London Bridge Quarter development. The Shard's construction began in March 2009; it was topped out on 30 March 2012 and inaugurated on 5 July 2012. Practical completion was achieved in November 2012. Its privately operated observation deck, the View from the Shard, opened to the public on 1 February 2013.

Standing approximately 306 metres (1,004 ft) high, the Shard is currently the tallest building in the European Union. It is the second-tallest free-standing structure in the United Kingdom, after the concrete tower at the Emley Moor transmitting station. The glass-clad pyramidal tower has 72 habitable floors, with a viewing gallery and open-air observation deck – the UK's highest – on the 72nd floor, at a height of 244.3 metres (802 ft). It was designed by the Italian architect Renzo Piano and replaced Southwark Towers, a 24-storey office block built on the site in Southwark in 1975. The Shard was developed by Sellar Property on behalf of LBQ Ltd and is jointly owned by Sellar Property and the State of Qatar.

6. Social Programme

One of the main objectives of the conference is for delegates to meet and network with colleagues from around the world. To that end the following social programme has been arranged:

Monday 16th June, from 7pm: **Welcome drinks in the Trafalgar Tavern** adjacent to the University of Greenwich. Come and join us for drink to start the conference off and get to know your fellow delegates. Very informal. Pay as you go bar. Please wear your conference badge and lanyard to help us spot you, and facilitate introductions. Great view of the Thames!

www.trafalgartavern.co.uk

Tuesday 17th June, from 7pm: Networking Reception at the Meantime micro-brewery. With a wide selection of great beers and ales, this venue is a great place to discuss the subjects of the day. Pay as you go bar. Located within the campus, 500 meters of the conference venue.
Dress: informal + conference badges

www.oldbrewerygreenwich.com

Wednesday 18th June, from 6:30pm: Gala Dinner in the Painted Hall.
The magnificent Painted Hall will provide a superb setting for the Gala Dinner. This is a formal event. Black tie or dark lounge suit is the dress code. The meal is included in the full delegate fee. Accompanying drinks (wine, soft drinks, etc.) will be available from a cash bar.

7. University of Greenwich

UNIVERSITY of GREENWICH

www.gre.ac.uk

Greenwich Campus is located in the old Royal Naval College, which it moved into in the 1990s when the premises were sold by the Royal Navy. This makes it look like an old University when actually it's a former polytechnic which only became a university in the 1990s.

Three of the university's schools are based here: the Business School, the School of Computing and Mathematical Sciences and the School of Humanities & Social Sciences. The campus is also home to the university's Greenwich Maritime Institute, a specialist maritime management, policy and history teaching and research institute.

Travel: http://www.visitgreenwich.org.uk/how-to-get-to-greenwich

Greenwich Campus plan

1 **East Gate Entrance**
- Security and Information

2 **Queen Anne Court**
- Coffee Shop
- Events Office
- Greenwich Maritime Institute
- Open Computing Facilities
- Stephen Lawrence Gallery

3 **University Café**

4 **Queen Mary Court**
- Architecture & Construction Studio
- Accommodation Office
- Business School
- Disability & Dyslexia Team
- Enquiry Unit and International Office
- Greenwich Research & Enterprise
- Guidance & Employability Area
- Law and Sociology Office
- Office of Information & Library Services
- Open Computing Facilities
- Professional Learning & Development
- School of Computing & Mathematical Sciences
- Student Centre

5 **King William Court**
- Computing Short Courses
- Multimedia Television Studio
- School of Humanities & Social Sciences

6 **University Bookshop**

7 **West Gate Entrance**

8 **Dreadnought Library**
- Coffee Shop
- Information & Library Services
- Language Laboratories
- Study Skills Centre

9 **Stephen Lawrence Building**

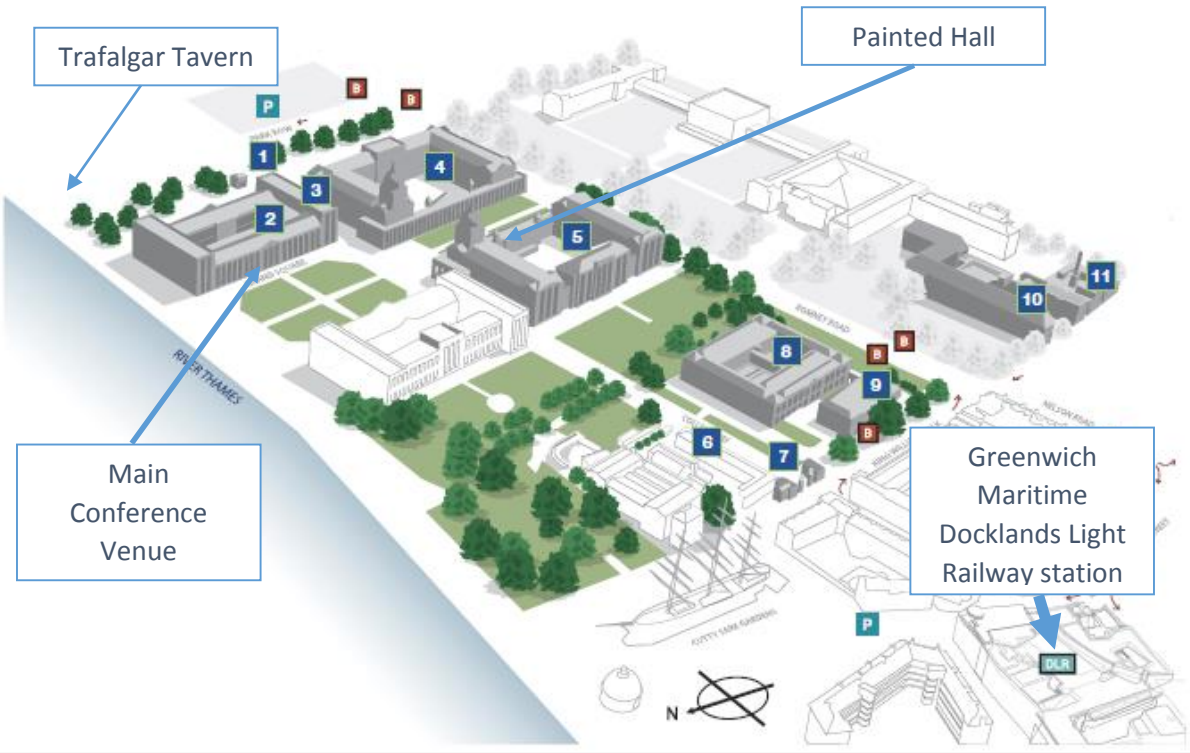
10 **Devonport House**
- Conference Centre – Initial Style Conferences
- Postgraduate and Mature Students' Accommodation

11 **Cooper Building**
- Bar Latitude
- Students' Union

B **Bus Stops**
177 Thamesmead Central
180 Belvedere Industrial Area
188 North Greenwich and Central London
386 Woolwich
286 Avery Hill

P **Public Parking**

DLR **Docklands Light Railway**



8. Hotels

Most local Hotels to the University of Greenwich are now fully booked. Delegates who have yet to book accommodation are advised to widen their search. Transport links to the University are good via the Docklands Light Railway.

Best Internet Search Engine: **www.booking.com**

9. FIREX

The Tall Building Fire Safety Conference is being run in co-ordination with FIREX, the UK's major Fire Exhibition and conference. All delegates attending the Tall Buildings Conference will receive VIP access passes to FIREX. Full details:

www.firex.co.uk

10. Help?

Before the conference:

Updates and information will be posted on our Linkedin page
– Tall Building Fire Safety Network (please join if you have not done so already)

We will also send email updates regularly

During the conference:

We will have a delegate help desk operating during the conference.

Julie & Ursula will be on hand to answer your questions and make sure you have the best conference possible.

At any time:

Contact conference director Russ Timpson:

Office: 02034 780678 Mobile: 07951 190576

Email: russ.timpson@horizonscanbcp.com

Web: www.bcptesting.com

Delegate Organisations/Businesses booked to date:

- BT
- Hackney Homes
- Land Securities
- Allianz
- WSP
- Imperial College
- University of Bradford
- SECO
- TENOS
- Horton & Horton
- Hoare Lea
- ACE Group
- The Fire Surgery
- GSK
- HSBC
- UTC
- M&G Investments
- The Building Inspector
- Canary Wharf
- The Shard
- Kone
- Arup
- Mitsui Sumitomo
- London Fire Brigade
- BB7
- University of Greenwich
- Queensland Fire & Rescue Service
- University of Ulster
- New York City Department of Buildings
- Singapore Fire Safety and Shelter Dept
- City of London
- Ramboll Ltd
- LABC (Building Control)
- Tokyo University
- University of Denmark
- AECOM
- Norman Disney & Young
- CBRE
- Bureau Veritas
- Brandskyddslaget
- Fire & Safety (Australia)
- Hampshire Fire & Rescue Service
- Advanced Alarms
- Zeta Technology
- Lite 4 Life
- Evacuator
- Credit Suisse
- Pukyong University Korea
- Newcastle University
- Family Mosaic
- Knight Frank
- FRM magazine
- Grontmij
- Rockwool
- Pell Frischmann