University of Salford MANCHESTER

Centre for Disaster Resilience

Reducing the threat of disasters for vulnerable communities worldwide

www.disaster-resilience.salford.ac.uk

A research centre improving plans and recovery for natural and man-made disasters

The University of Salford's Centre for Disaster Resilience is a multi-disciplinary centre committed to improving the ability of countries and communities to plan for, and recover from, natural and man-made disasters

Our research has developed an understanding of how physical infrastructure reconstruction affects social cohesion among people affected by disaster.

The recommendations from our research have improved how communities recover and have strengthened the chance of lasting stability across the world.

The Centre is instrumental in developing a world in which governments, authorities, businesses, communities and individuals work together to create a society, which is able to withstand the effects of unforeseen events and threats.

Our vision is for a built environment that has the capacity to stand firm or adapt to reduce people's vulnerability to hazard and which can enable society to continue to function economically and socially when hazards occur.

We provide strategic advice and practical guidance based on rigorous research, informed by industry and community members. We work with key stakeholders to design, develop and manage buildings, spaces and places in a way which is sensitive to context.

We have a world-wide network of partners from policy, government, industry and academia who support our work.

The Centre for Disaster Resilience is part of the School of the Built Environment at the University of Salford, the highest-rated built environment research institute in the UK.

How our research contributes to society

Our research has:

- Informed and shaped a global United Nations campaign to encourage people to prepare for potential disasters.

Global strategy: The UN International Strategy for Disaster Reduction (UNISDR) global campaign: "Making Cities Resilient: My City is getting ready!" in conjunction with more than 20 partners helped to improve local knowledge of disaster risk and support capacity building. Salford Professors Dilanthi Amaratunga and Richard Haigh are members of the campaign's advisory panel. Based on their research, they have advised in a number of areas, including enhancing the effectiveness and efficiency of urban services, monitoring and reporting, and city-level disaster risk reduction.

In addition they also helped to develop a checklist of 10 essential areas for resilience, which are promoted to Mayors and local government officials from more than 1150 cities (*check figure as it is referred to as 900 elsewhere) worldwide.

Our research has:

- Contributed to the development of resources to enhance professional practice in the humanitarian sector across the world
- Shaped and influenced policy made by governments and other official bodies
- Been used to develop resources to enhance professional practice in the humanitarian sector.

Post-tsunami learning: We contributed to a handbook for disaster recovery practitioners developed by the Asian Disaster Preparedness Centre as part of a programme set up to learn lessons after the 2004 Indian Ocean tsunami. A consortium called 'Global Lessons Learned from Indian Ocean Tsunami Recovery Programme' (TGLL) was set up consisting of five of the hardest-hit countries (India, Indonesia, the Maldives, Sri Lanka and Thailand), the UN and the International Federation of Red Cross and Red Crescent Societies.

Our research informed guidance on mainstreaming urban disaster risk reduction into urban development, building urban resilience through a city-level action agenda for risk reduction, and advice on policy and legal frameworks and institutional arrangements. The handbook forms the basis of training for a wide range of stakeholders involved in relief and recovery, including the government, UN agencies, the Red Cross, NGOs, academia, civil organisations, donors, technical institutions and communities.

"We are proud that this work makes a critically important contribution to lasting stability and to the quality of people's lives."
Vice-Chancellor, Professor Martin Hall

International Partnerships

Selected global partners

- UN-HABITAT United Nations Human Settlement Programme
- The World Bank
- UK Foreign and Commonwealth Office
- Royal Institution of Charted Surveyors (RICS), UK
- Chamber of Construction Industry, Sri Lanka (CCI)
- University of Moratuwa, Sri Lanka
- Eastern University, Sri Lanka
- Social Policy and Analysis Research Centre, University of Colombo, Sri Lanka
- Regional Public Administration Training Centre, Dhaka, Bangladesh
- Patuakhali Science and Technology University, Bangladesh
- National Institute of Disaster Management, India
- University of Madras, India
- Kadambari Memorial College of Science and Management, Nepal
- SUTRA Centre for Development Education and Research, Nepal
- Kyoto University, Japan
- UTM, Malaysia
- Indonesian Institute of Sciences, Jakarta, Indonesia
- NUS, Singapore
- Asian Disaster Preparedness Centre, Bangkok
- The Royal Melbourne Institute of Technology (RMIT), Australia
- University of Queensland, Brisbane, Australia
- University of Newcastle, Australia
- University of South Australia, Australia
- University of Western Sydney, Australia
- RMIT University, Australia
- University of Perth, Australia
- Resilient Organisations, New Zealand
- UNITEC Institute of Technology, New Zealand
- University of Palermo, Argentina
- Federal University of Parana, Brazil
- Purdue University, USA
- Ball State University, Indiana, USA
- University of Calgary, Canada
- York University, Canada
- University of British Columbia, Canada
- Justice Institute of British Columbia, Canada
- UNISDR, Geneva
- Vilnius Gediminas Technical University, Lithuania
- Tallin University of Technology, Estonia
- Israel Institute of Technology, Israel
- UNHABITAT, Kenya
- Stellenbosch University, Matieland, South Africa

The Conflict Prevention through Infrastructure Reconstruction Project

Supporting the rebuilding of Sri Lanka after its devastating civil war

Our research has developed an understanding of how physical infrastructure reconstruction affects social cohesion among people affected by disasters – whether natural or man-made. Its recommendations have improved how communities recover and strengthened the chances of lasting stability.

- We have a 25-year relationship with Sri Lanka, including experience of the 2004 tsunami
- Successful research into relationship between physical infrastructure reconstruction and social cohesion
- An international collaboration, which was inter-disciplinary, multi-cultural and inter-sectoral
- Partners included the University of Colombo, Eastern University, the University of Jaffna and the Chamber of Construction Industry
- Included researchers in the remote areas most affected by the conflict
- Multi-ethnic research team that interacted with diverse communities
- Major conference and policy briefings communicated the results to key stakeholders
- Links between universities in Sri Lanka and Salford were strengthened and new links forged.

The research helped to increase the capacity of local stakeholders to deliver infrastructure reconstruction programmes, which were sensitive to the needs of people affected by the conflict.

We have worked with the Sri Lankan Government and its universities following the devastating civil war to develop, refine and implement policies for reconstruction, which promote socially-inclusive development and support cultural diversity.

Key benefits of our approach:

- Our research helped to identify the issues faced by local people from a variety of backgrounds and businesses
- Examples of successful capacity building and infrastructure developments which aided community cohesion were identified, alongside examples which had not worked well
- We worked collaboratively with Sri Lankan universities, municipal government and organisations to educate decision-makers and make sure that the learning made a difference to local communities
- Our research influenced government policy and developed stronger working relationships between a range of businesses, organisations and communities, including creating a network of disaster resilience professionals
- The research shaped a global United Nations campaign to enhance professional practice in disaster recovery.

Life after disaster was improved:

- Disasters and conflict devastate the lives of millions of people across the world. Creating a conducive environment for local, regional and national developments and reconstruction following these types of traumatic events greatly improves the living conditions of those affected and supports the rebuilding of the areas involved
- Our research identified ways of developing infrastructure to improve social cohesion, increasing the likelihood of lasting stability and helping to deal with historical and existing tensions between communities.

"The research by Salford's Centre for Disaster Resilience is reducing the vulnerability of communities world-wide to the threat of natural or man-made disasters." **Professor Dilanthi Amaratunga**

Learning and development
Preparation is critical to dealing with disaster

The Centre has developed a range of tools to disseminate learning and information, and to support the development of knowledge, skills and structures to minimise the risks involved.

Conferences
We organise the regular International Conference on Building Resilience. Previous events have been attended by international academics, practitioners, professionals and policymakers. In 2014 the conference will be hosted in Salford in conjunction with the ANDROID Disaster Resilience Network www.disaster-resilience.net.

For more information visit:
www.buildresilience.org/2013

Continuous Professional Development
The Centre offers short tailor-made programmes for industry. Recent programmes were undertaken in conjunction with the Institute of Quantity Surveyors, Sri Lanka, the Chamber of Construction Industry, Sri Lanka, and the United Nations Development Programme, Sri Lanka.

Doctoral Study
The Centre supports researchers and practitioners worldwide in achieving higher qualifications and offers doctoral study on a full or part-time basis. It offers PhDs and Professional Doctorates that provide a flexible research path for professionals wishing to achieve academic recognition of their specialism and further the development of theory and practice in their field.

For more information visit:
www.salford.ac.uk/built-environment/research/research-centres/

Publications
The Centre's work has resulted in a large number of publications in journals, national and international conference papers and reports.

A list of recent publications can be found at:
www.disaster-resilience.net

International Journal of Disaster Resilience in the Built Environment
Professor Dilanthi Amaratunga and Professor Richard Haigh are the founding Editors-in-Chief of the International Journal of Disaster Resilience in the Built Environment.

The journal promotes research and scholarly activity that examines the role of building and construction to anticipate and respond to unexpected events that damage or destroy the built environment. The journal is published by Emerald Publishing and indexed in the British Library, Construction and Building Abstracts, ICONDA - The International Construction Database, Business Source Premier (EBSCO), ABI INFORM Global (ProQuest), Cambridge Scientific Abstracts (ProQuest), INSPEC and Scopus.

In 2013, a special issue of the journal, entitled 'Making Cities Resilient: From Awareness to Implementation,' was Guest Edited by Helena Molin Valdes, Director a.i., UNISDR. The issue included world-class research which supports the UNISDR Making Cities Resilient campaign - 'My City is Getting Ready.'

"The work of the Centre for Disaster Resilience is making a real difference to the wellbeing of people across the world who are affected by traumatic events – whether natural or man-made.

Vice-Chancellor, Professor Martin Hall

The Centre is supported by major UK, European and global agencies, which fund its research and development activities, as well as major sponsors from industry, local government and the not-for-profit sector including the European Union, the UK Engineering and Physical Sciences Council, the British Council, the Royal Institute of Chartered Surveyors and the UK Foreign and Commonwealth Office.

Current work includes:

- Leading the ANDROID (Academic Network for Disaster Resilience to Optimise Educational Development) network of 64 universities across Europe, plus higher education institutions from Australia, Canada and Sri Lanka. The network promotes cooperation and innovations among European higher education institutions to increase society's resilience to disasters.

  Its research and engagement has a significant influence on policymaking and practice and includes joint work to describe, analyse and compare the capacity of European cities and higher education institutions to address disaster risk. The network provides data, advice and guidance for policymakers and practitioners on the role of building and construction to anticipate and respond to unexpected major events which damage the environment.

  Investigators: R Haigh, D Amaratunga

- Engagement in CEREBELLA (Community Engagement for Risk Erosion in Bangladesh to Enhance Lifelong Advantage) which aims to share skills, knowledge and experience on climate change and disaster management. Funded by the British Council, the work is a partnership between us and Patuakhali Science and Technology University in Bangladesh.

  Investigators: D Amaratunga, R Haigh, U Kulatunga

- A major study to understand how infrastructure reconstruction programmes have impacted on women and vulnerable groups and affected social cohesion among local communities in conflict-affected areas of Sri Lanka - 'Conflict Prevention through Youth Engagement in Infrastructure Reconstruction,' funded by British High Commission, Sri Lanka.

  Investigators: R Haigh, D Amaratunga

- A series of studies to develop key knowledge variables for post-disaster scenarios and platforms for creating and managing knowledge among major stakeholders, including government, industry and academia – 'Island & Island II: Inspiring Sri Lankan Renewal and Development,' funded by RICS Education Trust.

  Investigators: C Pathirage, R Haigh, D Amaratunga

- A capacity development programme for Asian and European Higher Education Institutions undertaking training, teaching and research into disaster - resilient infrastructure. 'Asian Link Project': EURASIA – European and Asian Infrastructure Advantage, EC (Framework). This included staff exchanges, programme development and a doctoral programme.

  Investigators: R Haigh, D Amarantunga

- A consortium of researchers drawn from 14 universities developed a set of tools for improving the capacity for resilience of local communities to the impacts of future extreme weather events. Community Resilience to Extreme Weather (CREW).

  Investigators: B Ingirige

CENEAST
We are teamed up with institutions in the Russian Federation to enhance the quality and relevance of built environment education. The three-year research project – CEN-EAST Reformation of the Curricula on Built Environment in the Eastern Neighbouring Area – has secured €98,601 of funding from the Tempus EU Programme.

Investigators: D Amaratunga, R. Haigh & K.Keraminiyage

Defences
We worked with the Royal Instituion of Chartered Surveyors (RICS) to "build up capabilities and capacities of chartered surveyors in the adaptation of SMEs and their properties to flood risk". The broad goal of this research is to contribute to the overall aspiration of up-skilling and raising the profile of chartered surveyors in order for them to be able to provide independent, reliable and valid advice on property level flood adaptation measures.

Investigator: B Ingirige

"The expertise developed by Salford's academics and their partners is helping to minimise the impact of disasters and assist in the effective recovery and rebuilding of communities and infrastructures following often catastrophic events." **Vice-Chancellor, Professor Martin Hall**

Profiles

Richard Haigh is a Professor at the Centre for Disaster Resilience, Joint Editor of the International Journal of Disaster Resilience in the Built Environment, and Co-Chair of the International Conference on Building Resilience series. His research interests include the conceptual understanding of resilience, the reintegration and rehabilitation of conflict-affected communities in Sri Lanka and engagement of the private sector in the development of societal resilience. Richard is Principal Investigator of ANDROID (Academic Network for Disaster Resilience to Optimise Educational Development), a partnership of 67 institutions across 31 countries committed to promote co-operation and innovation to increase society's resilience to disasters of human and natural origin.

Richard was also Principal Investigator of Conflict Prevention through Infrastructure Reconstruction, a 12-month intervention to enhance the capacity of local stakeholders to deliver conflict sensitive infrastructure reconstruction programmes within the North and East of Sri Lanka, and thereby to help prevent future conflict in the region. The project was funded by the UK Foreign and Commonwealth Office through the British High Commission in Colombo. Richard has published over 25 peer reviewed journal articles, 1 edited book, 7 book chapters, and 13 reports for a variety of stakeholders. A full list of Richard's publications, projects, and national and international activities can be found at **www.richardhaigh.info**.

Richard can be contacted at: **r.p.haigh@salford.ac.uk**.

Dilanthi Amaratunga is Professor of Disaster Management at the School of the Built Environment, University of Salford, where she leads the University's Centre for Disaster Resilience, responsible for supporting research on disaster management portfolios. She is also the Associate Head of International Development for the School of the Built Environment. Her research interests include post disaster reconstruction, including conflict mitigation, gender and projection; capability and capacity building in managing disasters; socio-economic measures for conflict-affected re-construction and women in construction. She has an interdisciplinary background in quantity surveying, facilities and business continuity management, education and training, gender and disasters and disaster mitigation and reconstruction and has experience of developing partnerships involving international research teams, government, NGOs and communities. She is the Co-Editor of International Journal of Disaster Resilience in the Built Environment.

Dilanthi has secured a number of significant, high profile grants for research to improve the knowledge gap between the short term recovery and long term reconstruction efforts associated with major disasters and to raise awareness and develop skills. She is the Principle Investigator of "CEREBELLA: Community Engagement for Risk Erosion in Bangladesh to Enhance Life Long Advantage."

Dilanthi has presented widely at international conferences, led international disaster management workshops and seminars and is working actively with the United Nations. She is an Advisory Panel Member of the United Nations International Strategy for Disaster Reduction Campaign on Resilient Cities 2010 - 2015. She has supervised and supported a wide range of post graduate research students and has produced more than 200, refereed papers and reports and given presentations in 25 countries. Dilanthi is also a Member of the Royal Institution of Chartered Surveyors (RICS).

Her full profile can be viewed by visiting:
www.dilanthiamaratunga.net

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