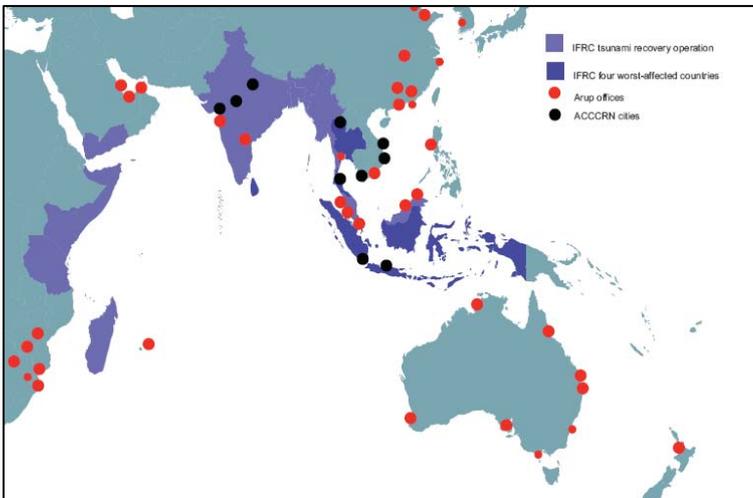




International Federation
of Red Cross and Red
Crescent Societies

Tsunami Recovery Programme

Disaster Risk Reduction:
Study Implementation
Proposal



ISSUE



*'Humanitarianism implies a social
conscience, a wish
to do socially useful work,
and to join hands with others
fighting for the same values'.*

From the Key Speech, Ove Arup, 1970

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ARUP

Contents

	Page
1 Introduction	1
2 Scope	2
3 Methodology	3
3.1 Overview	3
3.2 Output 1: Database of CBDRR projects	4
3.3 Output 2: Characteristics of a resilient community	4
3.4 Output 3: Key determinants of a successful CBDRR project	7
3.5 Output 4: Lessons Learned Report	7
4 Qualifications	8
4.1 Arup International Development	8
4.2 Project team	8
4.3 Project Experience	8
4.4 Previous Experience Working with the Red Cross Red Crescent	9
5 Programme	10
6 Resources	10

Appendices

Appendix A

Curriculum Vitae

1 Introduction

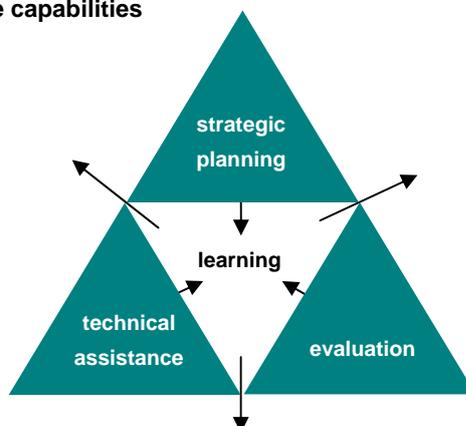
The creation of communities which are safer and more resilient to future disasters is central to all the **International Federation of Red Cross and Red Crescent Societies (IFRC)** programmes. In response to the Indian Ocean Tsunami the IFRC undertook '*the biggest disaster recovery operation in their history*¹. A significant number of National Society interventions focussed directly on reducing people's vulnerability to natural hazards through **Community Based Disaster Risk Reduction (CBDRR)**. This has been matched by global commitment to further the IFRC's understanding of DRR, scale up their activities and measure their impact.

Arup International Development² (Arup ID) have seen the value of the IFRC's programmes in Sri Lanka and Aceh where we have also provided advice and carried out evaluations for several tsunami response programmes. We are therefore pleased to submit this proposal which provides a unique opportunity to create an evidence base of learning which bridges the gap between theory and practice, and will provide a valuable resource for future programmes. The scope of this assignment builds very directly on our knowledge of the region, and our experience in disaster risk reduction and resilience; as well as capitalising on our key skills which include: participatory field based research, technical assessments, analysis of complex data and dissemination of learning outcomes. Please refer to section 2-3.

Arup ID is part of the Arup Group Ltd (Arup), and was formed in 2006 to provide strategic advice, technical expertise and evaluation to support high quality outcomes from humanitarian programmes. We understand the importance of appropriate technical solutions as well as the need to work collaboratively in challenging and changing situations. We act as a centre of excellence within the firm allowing the technical expertise within Arup to support organisations contributing to humanitarian work or sustainable development in developing countries.

We are submitting this proposal in partnership with Dr John Twigg, **University College London (UCL)** who is a specialist in disaster risk reduction (DRR), with a particular interest in community resilience and community-based disaster risk management and author of '*Characteristics of a Disaster-Resilient Community: a guidance note*³. Arup have a Memorandum of Understanding with UCL that is intended to draw on the strength of both organisations, enable collaborative working, share thinking on innovation and offer a unique service. The timescale of the assignment presents significant opportunity for added value, including the engagement of doctorate students to undertake supportive work.

Figure 1 Arup ID core capabilities



¹ Tsunami 5 year Progress Report 2004-2009, IFRC, pp6

² www.arup.com/internationaldevelopment

³ Twigg, J (forthcoming 2010) Characteristics of a Disaster Resilient Community – Second Edition <http://www.proventionconsortium.org/?pageid=90>

2 Scope

To date nearly 600 communities have received assistance from the IFRC to map the hazards they face and undertake small-scale prevention and mitigation projects and more than 38,000 people have been trained in community-based disaster management⁴. The IFRC have also supported the development of early warning systems, the creation of digital hazard maps and built the capacity of national societies to respond to future events.

To improve their understanding of DRR globally and facilitate scale up the IFRC has developed the **Framework for Community Safety and Resilience**, and established a **Global Alliance on DRR (GADRR)**. They have also undertaken longitudinal impact evaluations, cost-benefit analysis and developed standard indicators, but a set of indicators on what constitutes a “safe and resilient community” has yet to be developed⁵. Hence this assignment - a “Disaster Risk Reduction Study for the IFRC’s Tsunami Recovery Programme”.

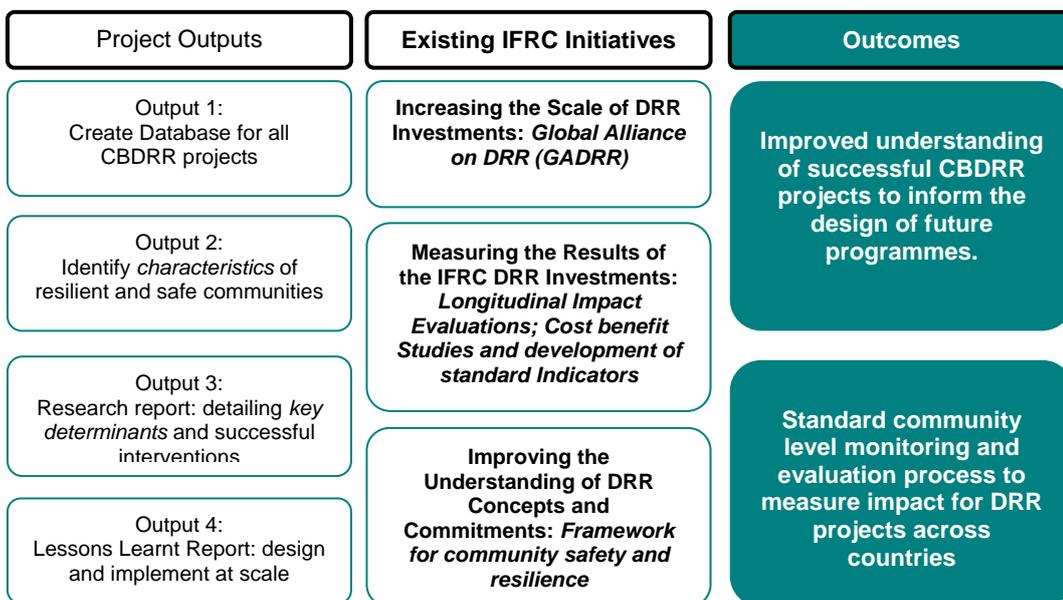
The outputs of this study:

- A “who, what, where” **database** of all IFRC CBDRR projects (Output 1)
- A set of “**characteristics**” of safe and resilient community (Output 2)
- A research report identifying the “**key determinants**” of a successful CBDRR project (Output 3)
- A **lessons learned report** detailing how to design and implement CBDRR programmes at scale (Output 4).

These outputs will inform the design, monitoring and evaluation of future DRR projects. See Figure 2.

The study will be guided throughout by a **Working Group** of key national societies and IFRC departments. A workshop has been requested as part of the terms of reference to discuss the initial findings and inform the production of final outcomes. This workshop is critical to enhancing the quality of the final outputs, and exploring how they will be integrated into global DRR programming activities.

Figure 2 Outcomes that link existing IFRC initiatives and the assignment outputs



⁴ Tsunami 5 year Progress Report 2004-2009, IFRC

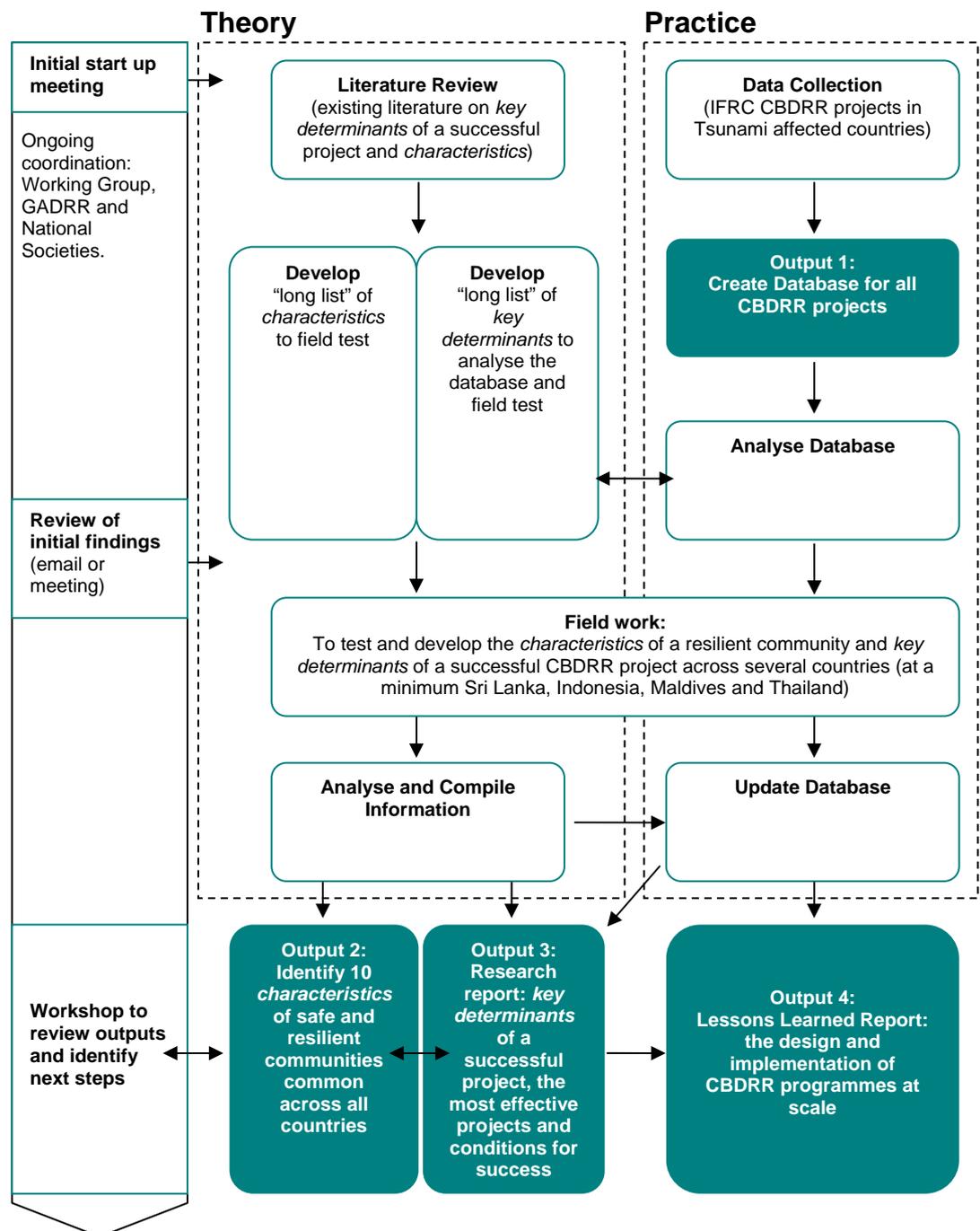
⁵ Concept Note for DRR Study, IFRC

3 Methodology

3.1 Overview

Arup’s approach to this study is shown in Figure 3. In summary, this involves a literature review and period of data collection, followed by field testing, analysis of the fieldwork and reporting. The interaction between theory and practice is critical to achieve a successful outcome which is practical yet founded on current thinking and accepted best practice in this field. Equally important is interaction with the Working Group, National Societies and GADRR which provides a mechanism for review and feedback, creating shared ownership and support for the outcomes. Key workshops have been indicated as minimum and it is assumed that we will be able to schedule additional meetings and interface with the Working Group by e-mail if required.

Figure 3 Proposed methodology for the disaster risk reduction study



3.2 Output 1: Database of CBDRR projects

The starting point for this project is the creation of a database which will provide an evidence base for learning based on the projects undertaken to date. The IFRC have undertaken CBDRR programmes in 600 communities, with a target of approximately 1250⁶ in total. From the information we have access to, we have not been able to determine how many projects have been carried out in each location. It will be important to ensure that the database is as comprehensive as possible, and that all relevant projects and relevant documentation is available. We have assumed that the IFRC will facilitate coordination and contact with the National Societies to ensure an efficient flow of information.

A priority in designing a database is to ensure that can be easily updated and has a continued relevance and use beyond the end of a specific project. We propose that Arup ID collect sample data, consult with the Working Group, design and test the database which can then be populated directly by National Societies. This can be readily achieved via a simple web-based questionnaire and uploading project records. This approach also helps to generate ownership of the database within IFRC, ensure efficient handover at the end of the study and develop the skills within the IFRC to maintain and expand the database at a later date.

We propose building the database using **Microsoft Access**. This is a user-friendly software tool, appropriate to the scale of this project, and is provides more flexibility in data management than Microsoft Excel. However the entire database can be readily exported to Microsoft Excel if required, and made available on a CD-ROM.

Task 1: Gather sample input data from National Societies, consult Working Group
Key questions for the working group include: What is the purpose of the database? Who is going to use the database and how? What data should be collected?

Task 2: Design and build the database and data entry 'questionnaire'
Design database based on sample project documents and consultation with Working Group. Complete user-acceptance testing to ensure the software is intuitive and robust. Develop and test the web-based data entry 'questionnaire'. Review outputs with Working Group.

Task 3: Data entry
National Societies complete the 'questionnaire' and upload supporting documents with coordination from IFRC. For documents not available in English, a summary of the project data can be uploaded in English while the supporting documents remain in the local language. Data entered by National Societies will be reviewed by the Arup ID team to ensure quality control and questions clarified before the record is entered into the database.

Task 4: Finalisation of the database
Finalisation of the database for effective handover will include improvements to the graphic layout, packaging the database and supporting documents for end users and compiling a brief user-manual describing the components of the database and how it should be used.

3.3 Output 2: Characteristics of a resilient community

Resilience is a complex cross-cutting issue, and various efforts have been made to define key characteristics of resilience which can be used to design and/or assess existing situations and/or interventions. Notably, John Twigg's very comprehensive 2007 report⁷ identified approximately 70 indicators under 5 thematic areas. Whilst Arup (and ISET)⁸ have been refining an initial list of 12 characteristics as part of their on-going work in India,

⁶ Tsunami 5 year Progress Report 2004-2009, IFRC

⁷ Twigg, J (forthcoming 2010) Characteristics of a Disaster Resilient Community – Second Edition <http://www.proventionconsortium.org/?pageid=90>

⁸ <http://www.i-s-e-t.org/>

Vietnam, Thailand and Indonesia on the Asian Cities Climate Change Resilience Network (ACCCRN) for the Rockefeller Foundation. This has highlighted the challenge of language, and the need to ensure that characteristics can be translated into different languages whilst retaining their meaning. Using case studies to illustrate characteristics is an important mechanism to support precise and succinct definitions.

Task 1: Review existing literature on *key characteristics* of safe and resilient communities.

The literature review will draw on ‘grey literature’ as well as peer reviewed publications. It will include research and projects by Arup and UCL and published indicators by others (see box 1). The literature review, will inform a preliminary list of *characteristics* (perhaps 20-40 indicators) to form the basis of the community based research method in Task 2.

Box 1: Other resilience and DRR indicator initiatives

- Characteristics of a Disaster Resilient Community (Twigg, 2007 DFID)
- National-level guidance on indicators for priorities 1-4 of the Hyogo Framework (UN ISDR 2008).
- National-level indicators for priority 5 of the Hyogo Framework (UN ISDR/UN OCHA 2008).
- Manual on evaluating coastal community resilience to hazards (IOTWS 2007).
- Manual for assessing the resilience of energy systems at national level (Williamson and Connor 2008).

Task 2: Design a community-based research methodology

Arup ID have experience of developing community-based research techniques for specific applications (see Box 2). We recognise that active involvement of the communities and the National Societies will be critical to ensure accurate and relevant data collection, feedback and project ownership. The community-based research methodology employed will be based on **Participatory Rapid Appraisal** (PRA) techniques, which will be familiar to IFRC National Societies. It will be developed and agreed with the Working Group and the relevant National Societies.

Box 2: Examples of other PRA exercise designed and implemented by Arup ID

	<p>Community members mapped the strengths of their assets – before the tsunami, after the tsunami and after Habitat for Humanity’s shelter programme to identify key vulnerabilities and capacities. This formed part of the background research for an ASPIRE assessment.</p> <p>Client: Habitat for Humanity International</p> <p>Country: Thailand, Indonesia, Sri Lanka, India</p>
	<p>Key priorities were identified and prioritised by the community using pair-wise ranking and livelihoods mapping. This formed part of a wider assessment to identify the focus for future work in the communities.</p> <p>Client: Resource Centre for Participatory Development Studies (RCPDS)</p> <p>Country: India</p>

The purpose of the field work will be to define and refine *key characteristics* of a safe and resilient community. Secondly to understand the impacts of CBDRR interventions and identify the *key determinants* of a successful CBDRR project (see also 3.4). The community based research methodology will be developed accordingly and will comprise both **interviews with key stakeholders** and **community-based workshops** in which communities will be asked:

- To identify the key characteristics of a safe and resilient community
- To compare their characteristics with those identified during the literature review
- To prioritise their “top ten” characteristics
- To assess the relative strength of these characteristics before and after the tsunami
- To identify the impact of IFRC interventions on these characteristics and if their attitudes and behaviours towards risk have changed over time.

Task 3: Fieldwork

It is necessary to adopt a strategic approach to data collection that recognises the number and distribution of the IFRC’s tsunami recovery CBDRR programmes, the limited time frame and resources for this study. On similar projects we have identified a practical and representative sample size based on statistical analysis (see Box 3) combined with an understanding of the time constraints of conducting workshops. It is proposed that workshops are held in a minimum of 30 communities⁹ across several countries (including Indonesia, Sri Lanka, Maldives and Thailand). This will give 90% confidence level with a 15% margin of error in the findings in relation to the 1246 communities assisted.

Box 3: Statistical determination of required sample size

The following formula has been used for calculation of sample size¹⁰. As a trade off between precision and sample size, a 90% confidence level with a margin of error of 15% was adopted¹¹.

Number of communities assisted (planned)	Sample size required
1,246	29

$$\text{Sample size } n = \frac{0.25N}{(N-1)D + 0.25}$$

Where:

$$D = \text{Margin of Error}^2 / (z\alpha/2)^2$$

$$N = \text{Population size}$$

$z\alpha/2$ = number of standard deviations relative to the mean of the standard normal curve corresponding to the level of confidence. $z\alpha/2$ is 1.645 for 90% confidence level.

The field work will be carried out in October 2010. We have assumed that one member of the project team will conduct fieldwork in each country (see 5: Programme) and that they would be supported by the National Societies. We recommend that one project office act as a base for the field trip and that one or more staff members accompany us on the field trips both to act as interpreters and familiarise themselves with the community-based research methodology.

A typical field visit will include: familiarisation of local staff with participatory workshop methodology; conducting community workshops; stakeholder interviews with community leaders, IFRC project/programme managers, local government officials and partner NGOs.

Task 4: Analysis and Reporting

Analyse the results of the fieldwork, based on which the set of *characteristics* identified previously in the literature review will be refined to provide a final list ten *characteristics*. This will be included in the **Research Report** (see 3.4)

⁹ This number would need to be reviewed once data on all CBDRR projects have been compiled.

¹⁰ Oveson, M. (n.d.) *Sample size determination for survey design*. Available from <http://surveyz.com/client/sampling.doc>.

¹¹ This means that if 60% of communities stated express a certain opinion, actually 52.5-67.5% of communities overall would express the same opinion 90% of the time.

3.4 Output 3: Key determinants of a successful CBDRR project

Through this study the lessons and learning from the tsunami recovery programme will be captured, and analysed so as to identify *key determinants* which can be used to enhance the design and implementation of future CBDRR programmes around the world. Having undertaken hundreds of CBDRR projects in several countries the IFRC are keen to understand:

- Which were the most successful interventions and services?
- What are the *key determinants* of a successful CBDRR projects?
- What are the critical factors and conditions that enable CBDRR projects to succeed?

Meta-analysis at this scale involving both qualitative and quantitative data; the identification of critical parameters; and the clear presentation of complex ideas is a key strength of Arup ID and we recognise that a methodical and rigorous approach is needed.

Task 1: Research and identify *key determinants*

A preliminary list of *key determinants* of a successful CBDRR project will be identified through a literature review, consultation with the Working Group and key experts in humanitarian response and disaster risk reduction.

Task 2: Use the key determinants to analyse the “who, what, where database”.

This will be used to identify the most effective CBDRR interventions and services in the database, and inform which communities are included in the field work. This analysis will specifically address; the role of Vulnerability and Capacity Assessments (VCA); the role of National Societies and the long-term sustainability of actions and impacts with reference to the ASPIRE framework¹².

Task 3: Fieldwork

Key determinants identified through tasks 1 and 2 will be further refined through field testing. A stakeholder questionnaire will be developed to test the *key determinants* at project/programme level through interviews with community leaders, IFRC project staff at HQ and branch level, local government officials and partner NGOs (see 3.3, task 3). This will be supplemented by direct field observations.

Task 4: Analysis and reporting

Analysis of the field work will enable the *key determinants* identified in task 1-2 to be further refined. At this stage the initial outcomes from the project analysis and field testing will be presented and discussed with the Working Group at a **workshop**. Its purpose will be both to review the outputs and understand how they will be mainstreamed in future CBDRR programmes. Final conclusions will be drawn and the outcomes of the literature review, meta-analysis and field testing will be summarised in a **Research Report**.

3.5 Output 4: Lessons Learned Report

It is critical to the success of this study that the **Lessons Learned Report** with recommendations on how to design and implement CBDRR projects at scale is accessible and presented in a format that promotes learning and influences future practice. Arup ID have demonstrated our synthesis and communications skills and ability to compile theoretical and practical outputs of research into appropriate guidance, through a number of publications including *Lessons from Aceh*¹³ and *Building Back Better*¹⁴. The working group will be consulted to ensure that the report has a clear audience and the final written content and graphic style fulfils their requirements. This will be summarised as a **scoping document** based on which we will write the final report.

¹² <http://www.oasys-software.com/products/sustainability/aspire/>

¹³ Available to download from www.arup.com/internationaldevelopment

¹⁴ Available to download from http://practicalaction.org/aim3_developmentfromdisaster 032009

4 Qualifications

4.1 Arup International Development

This proposal is submitted by **Arup International Development** (Arup ID) which operates as a not for profit group within the Arup Group Ltd (Arup). Arup was founded in 1946 and now has over 10,000 staff working on projects in over 160 countries. Arup has no external shareholders and are owned by Trusts established for the benefit of our staff and for charitable purposes. Our financial independence allows us to pursue our mission 'to shape a better world'¹⁵.

Arup ID acts as a centre of excellence and coordination point in the firm for international development work. We comprise a 'core' professional team of architects, engineers, planners, designers and project managers who also have postgraduate qualifications in development and/or significant experience of working overseas in humanitarian and development contexts. We understand the importance of appropriate technical solutions in mitigating environmental impact and alleviating poverty in development work, and the need to work collaboratively to achieve this. Our philosophy of combining global expertise with local knowledge has proven effective across a wide range of projects, sectors and geographies.

4.2 Project team

The project team has been specifically selected due to their previous experience with DRR, community engagement and research methodologies, analysis of complex data sets and knowledge of the region. As part of the Arup Group we have access to the wider technical expertise in the firm and can access specialists in key areas such as multi-hazard analysis and database design.

The assignment will be managed and undertaken by a core team from Arup ID consisting of **Jo da Silva, Victoria Batchelor, Elizabeth Parker** and **Rumana Kabir**. Through our partnership with University College London we will also work with leading expert **John Twigg**, who will provide ongoing advice and review. We will involve post-graduate students at UCL to augment the project outcomes.

4.3 Project Experience

Arup have strong organisational and managerial capabilities with significant experience relevant to this assignment. Particular capabilities include:

Understanding of the local context

Arup ID has significant experience of working in Tsunami affected countries, primarily **Sri Lanka, India** and **Indonesia**. Over the last 6 years we have built up a strong understanding of the local context and developed a detailed knowledge of the tsunami response programmes. Key projects include:

- **Post-Tsunami Reconstruction-** Provided detailed technical assistance and strategic advice for a number of organisations including Canadian Red Cross, Muslim Aid, CARE International and UNHCR.
- **Assurance Mission** – Carried out a 3 year review of the post-tsunami reconstruction programmes of Disasters Emergency Committee (DEC) focussed on beneficiary selection, partnerships, implementation methodology and quality. Recommendations for satisfactory completion were provided.
- **Post-Tsunami Housing Evaluation-** Arup worked with field teams and national offices from India, Sri Lanka, Thailand and Indonesia to assess the sustainability of Habitat for Humanity International's tsunami-response shelter programme of over 16,000 homes.

Disaster Risk Reduction and Resilience

Arup ID and UCL understand the complexities of **DRR**, resilience and climate change adaptation and the importance of building capacity. We combine this detailed understanding of the key issues with our **technical expertise** to ensure rigorous analysis and awareness of hazards, capacities and vulnerabilities. Key projects include:

- **Disaster Risk Reduction Resources-** Developed learning resources for DFID on the role of infrastructure in DRR (prevention, mitigation, response, recovery/reconstruction)
- **Asian Cities Climate Change Resilience Network-** A 5 year programme that aims to build climate change resilience for poor and vulnerable people in urban areas. The project involves participatory planning with key stakeholders to understand urban vulnerability, climate change impacts and dependency on the urban system, based on which resilience indicators plans and interventions have been identified.
- **Characteristics of a Disaster Resilient Community, John Twigg** is an expert in community resilience and DRR with more than 15 years experience. He is the author of *Characteristics of a Disaster-Resilient Community* for which he carried out extensive research and field work to develop and test a large number of indicators.

Standardised indicators or framework

Arup has proven capabilities in the analysis of complex information and the development of assessment frameworks and indicators. Key projects include:

- **ASPIRE¹⁶**- Is a comprehensive poverty and sustainability assessment tool that Arup ID have developed, trialled and now offer as a service. The ASPIRE framework examines the social, environmental, economic and institutional dimensions of sustainability using 96 indicators, specifically tailored for use in developing countries.
- **Lessons from Aceh¹⁷** – Research leading to a publication that sets out the key topics, challenges and inter-relationships in post-disaster reconstruction, drawing on the collective learning from NGO programmes in Aceh and elsewhere. The document captures the key challenges faced in the reconstruction of Aceh and highlights key lessons to inform future reconstruction programmes.

4.4 Previous Experience Working with the Red Cross Red Crescent

Arup have worked with the **IFRC** and its **national societies** for a number of years, providing technical assistance, programme evaluations and contributing to research and dissemination of good practice in a humanitarian and developmental capacity.

- **Canadian Red Cross** (2006) assessment of the suitability of bespoke housing systems for post-tsunami reconstruction in Aceh.
 - **British Red Cross** (2007): Evaluation of housing programmes in Aceh as part of our assurance mission for the Disasters Emergency Committee
 - **Spanish Red Cross** (2008- present): framework agreement to provide technical and contractual on their programmes in Peru
 - **IFRC** (2009) Authored a chapter on scaling up owner-driven housing programmes in Aceh "*Building Back Better: Delivering People-Centred Housing Reconstruction at Scale*"¹⁸
 - **IFRC** (2010) Proposal to support the IFRC in their Zambezi River Basin Initiative
- John Twigg has also worked on a number of assignments over the last 10 years for IFRC and their National Societies. Work for the **British Red Cross** has included a three year study of NGOs' involvement in natural disaster preparedness and the mitigation factors affecting this and their contributions to his recent publication *Characteristics of a Disaster-resilient Community*.

¹⁶ <http://www.oasys-software.com/products/sustainability/aspire/>

¹⁷ Available to download from www.arup.com/internationaldevelopment

¹⁸ Available to download from http://practicalaction.org/aim3_developmentfromdisaster_032009

5 Programme

A draft programme is included below but this needs to be confirmed through consultation with the Working Group and IFRC National Societies.

Key Activities	2010					2011			
	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April
Research									
Literature review	■	■	■						
Data collection	■	■	■						
Analysis									
Identify <i>key characteristics</i> and design research methodology			■	■	■				
Design and populate "who, what, where" database		■	■	■	■				
Identify <i>key determinants</i> of a successful project				■	■				
Fieldwork									
Test <i>key characteristics</i> and <i>key determinant</i> in at least 4 countries				■	■	■	■		
Analysis									
Identify common <i>key characteristics</i> across countries						■	■		
Identify common <i>key determinants</i> across countries							■	■	
Identify most successful projects and lessons learned								■	■
Reporting									
First draft research report							■	■	
First draft lessons learnt report							■	■	
Preparation for workshop								■	■
Workshop to present and discuss initial findings								■	■
Final draft all outputs (Draft Issue for comment)								■	■
Final draft all outputs (Final Issue)									■

The exact timing of the field work will depend on availability of in-country IFRC staff. Our preference is for the fieldwork to be completed in October/November.

6 Resources

We estimate that this proposal is between 30-40 man weeks of work over the nine month period. Our proposal is for a team to complete this assignment as we believe this will generate a high quality output in the most cost efficient manner for the IFRC.

We propose a lump sum fee of £77,950 based on the scope of work, resource estimate and expenses outlined in this proposal. Our fees are quoted in UK pounds sterling and exclude taxes if applicable. This is equivalent to 124,433 CHF based on today's exchange rate of 1.596. The lump sum fee includes expenses for fieldwork in four countries including: international travel and visas. It does not include in-country accommodation, subsistence, translation or transport as it is assumed that these will be covered directly by the National Societies participating in the fieldwork.

Outputs	Activities	Cost
Output 1: Database	Design and build database Coordination of data entry	£12,375
Output 2: Characteristics	Literature review Fieldwork Analysis	£22,225
Output 3: Research Report	Literature review and analysis Fieldwork Reporting	£23,025
Output 4: Lessons Learned Report	Workshop Final reporting	£15,525
Expenses		£4,800
Total (GBP)		£77,950
Total (CHF)		124,433 CHF

Appendix A

Curriculum Vitae



Profession

Civil Engineer

Current Position

Director, Arup International Development

Joined Arup

1984

Qualifications

MA Engineering, Cambridge

Chartered Engineer

Professional Associations

Fellow Royal Academy of Engineers

Member Institution Civil Engineers

Member Institution Structural Engineers

Member RedR

Committees

Visiting Senior Research Fellow: Centre for Sustainable Development, Cambridge Univ.

Institution Civil Engineers: International Development Policy Group

International faculty of the Prince of Wales' Business & the Environment Programme, run by the University of Cambridge

Key Data

Jo da Silva is a Director at Arup where she leads the International Development team. She has 20 years experience in construction and has worked in post-disaster and development contexts since becoming a RedR member in 1991. This has included providing shelter expertise in the Rwandan genocide, hurricane Mitch, Montserrat, the Indian Ocean Tsunami and the Pakistan earthquake. Jo's work with the International Development team focuses on sustainable development, poverty alleviation and vulnerability reduction and she has particular expertise in improving access to essential services, low income housing, urbanisation and human settlements, post-disaster recovery and reconstruction, disaster risk reduction and climate change adaptation.

Jo sits on the International Development Policy Group at the Institution of Civil Engineers as well as lecturing at the Centre for Sustainable Development at the University of Cambridge. She is a member of the international faculty of the Prince of Wales' Business & the Environment Programme, run by the University of Cambridge Programme for Sustainability Leadership. Jo sits on the Global Agenda Council for Humanitarian Assistance at the World Economic Forum. She also contributes to the UK Shelter Forum, was a Trustee of Engineers without Borders and is a Fellow of the Royal Academy of Engineering.

Relevant Projects

Asian Cities Climate Change Resilience Network (Rockefeller Foundation)

Advice on the development of a best-practice approach for the delivery of the Rockefeller Foundation's Asian Cities Climate Change Resilience Network in Vietnam, Thailand, India and Indonesia. Technical assistance in programme management, vulnerability assessment, identification and implementation of methodologies/projects to build climate change resilience among the urban poor.

Post-tsunami reconstruction, Aceh (Disasters Emergency Committee)

Assurance mission to review construction of schools, health centres and houses by eleven UK NGOs with respect to quality, seismic performance, construction management, beneficiary accountability and partnerships. Identification of best practice case studies and distillation of lessons learned into the publication *Lessons from Aceh: key considerations in post-disaster reconstruction*.

Post-tsunami Shelter, Sri Lanka (UNHCR)

Senior Shelter Coordinator for UNHCR post-tsunami reconstruction. Responsible for coordinating 100 NGOs to provide 53,000 shelters in 7 months, liaison with local and national government, funding bodies and key stakeholders. Design and construction of 4,400 UNHCR shelters, project/programme monitoring review, stakeholder consultation, assessment, evaluation and reporting.

Sustainability assessments of tsunami-response shelter programmes Indonesia, Thailand, Sri Lanka, India (Habitat for Humanity International)

Project Director for the sustainability assessment of Habitat for Humanity's tsunami-response shelter programmes - over 16,000 houses in Sri Lanka, India, Thailand and Indonesia - using Arup International Development's ASPIRE tool.

Programme for Sustainability
Leadership

Publications include:

Lessons from Aceh: Key Considerations in Post-Disaster Reconstruction, contributing author (Practical Action Publishing, 2010)

Indonesia: Understanding agency policy in a national context in Lyons and Schilderman eds. (2010) *Building Back Better: Delivering people-centred housing reconstruction at scale* (Practical Action Publishing, 2010)

Coping with man-made and natural disasters: The Structural Engineer 21 July Centenary Issue

Engineering resilience: disaster risk reduction in the developing world: Engineering Change: October 2008

Quality & Standards in Post-Disaster Shelter: Structural Engineer July 2007

Engineers in Disaster Relief: Ingenia Issue 6. November 2000

RedR Assignment in Tanzania: Structural Engineer Volume 73/23&24 5

Review of Reconstruction in Aceh following the 2004 Boxing Day Tsunami for the 14th World Conference on Earthquake Engineering 12-17 October 2008, Beijing, China

Awards

2006 British Expertise Individual of Year

2007: Inspire Future of the Industry

Post-tsunami Reconstruction Aceh (Muslim Aid, Care International, Canadian Red Cross)

Technical advice on geo-hazards, seismic design, programme management (Muslim Aid). Review of alternative construction methods (CRC) Development of a "safe exit strategy" (CARE)

Disaster Resource Partnership (World Economic Forum)

Project Director for Arup International Development's work supporting the research and development of a global partnership of engineering and construction members of the World Economic Forum, humanitarian and development organisations, national governments and donors to enable the core strengths and existing capacities of engineering and construction companies to be mobilized during and after crises to reduce suffering and save lives.

Disaster Risk Reduction training resources (DFID)

Guidance and training resources for DFID Infrastructure and Livelihood Advisors.

Codes & Standards in DRR (World Bank)

Research into availability and application of codes and standards as a tool for mitigation of natural hazard risk in infrastructure projects.

Safe Schools Construction (GFDRR)

Technical expert for preparation of guidance notes to promote safe construction and reduce vulnerability to natural hazards

ASPIRE Sustainable Project Model (Engineers Against Poverty)

Project Director for the research and development of ASPIRE - a software based tool to facilitate decision making, monitoring and evaluation of infrastructure, building and planning projects in developing countries. www.oasys-software/aspire

South Eastern University, Sri Lanka (GoSL)

Academic and physical master plan to respond to local and regional educational needs, and mitigate flood risk, as a catalyst for socio-economic development in the area, exemplar of environmental design.

Kindergarten, Ghana (Sabre Trust)

Design of a pro-type kindergarten to promote active learning based on a performance based approach, and employing local materials. A sustainability assessment has been carried out through various stages of this project life cycle

Malawi schools programme (Clinton-Hunter foundation)

Review of MoE standard school design. Re-design to maximise daylight, thermal performance, seismic performance and minimise environmental impact through material specification, design optimisation and technology.

African Institute of Science and Technology (Nelson Mandela Institute)

Sustainability framework for a new higher education campus in Abuja, Nigeria.

Dr John Twigg



Current Position

Senior Research Associate and Independent Consultant, University College London, Hazard Research Centre

Qualifications

PhD History

BA History

Committees

Member of International Disability and Development Consortium Task Group on Conflict and Emergencies (ongoing)

Member of International Scientific Advisory Group to the 3rd UN International Conference on Early Warning Systems (2006)

Member of HelpAge International advisory group for revisions to Sphere Humanitarian Charter and Minimum Standards in Disaster Response (2004)

Member of the UK National Co-ordination Committee for the UN International Decade for Natural Disaster Reduction (1997-9); secretary of IDNDR national working group on applications and implementation of disaster mitigation measures (1994-9).

Key Data

Dr John Twigg, Senior Research Associate at University College London (UCL), specialises in disaster risk reduction (DRR), with a particular interest in community resilience and community-based disaster risk management. He is the author of 'Characteristics of a Disaster-Resilient Community: a guidance note' (1st edition 2007; 2nd edition in press), which is widely used by NGOs and other actors around the world to plan, implement and monitor local-level DRR initiatives. Other key areas of expertise include vulnerability and risk assessment methodologies; socio-economic vulnerability to natural disasters; disability and disasters; the institutional aspects of disaster management and risk communications, public education and early warnings. He has been commissioned to research and write extensively on these topics and is widely published.

John has over 15 years experience in this field and has worked for a range of international agencies, including a number of assignments with the International Federation of the Red Cross and Red Crescent Society and their National Societies. He combines this practical research background with academic teaching and is a key lecturer at UCL where he works primarily with MSc and PhD level students.

John sits on a number of committees including the International Disability and Development Consortium and the Scientific Advisory Group to the 3rd UN International Conference on Early Warning Systems.

Relevant Projects

Characteristics of a Disaster-resilient Community(DFID)

Development, validation and review of community-level Disaster Risk Reduction indicators as part of a DFID funded NGO programme that included ActionAid, British Red Cross, Christian Aid, Plan International UK, Practical Action and Tearfund; 2 phases for publication.

Sustainable Livelihoods Framework (Oxfam)

Study into the use of the Sustainable Livelihoods Framework in disaster risk reduction and climate change adaptation programming

World Disasters Report 2005 and 2007 (IFRC)

External reviewer 2005 edition, research and co-author of a chapter on disability and disasters for the 2007 edition.

Tools for Mainstreaming Disaster Risk (ProVention Consortium)

3 year programme to research and review methodologies and produce guidelines for incorporating hazard and risk assessment in development planning and monitoring and evaluating the impact of risk reduction measures

DRR Learning Review

(Action Aid, Christian Aid, Plan International UK, Practical Action, Tearfund)

Facilitator of DRR Learning review identifying lessons and issues arising from DFID-funded NGO programmes.

Dr John Twigg

Publications include:

Twigg J in press, *Characteristics of a Disaster-resilient Community: a guidance note*. (2nd revised and expanded edition. London: DFID DRR Interagency Coordination Group). c.80pp.

Twigg J in press, 'Identifying and Assessing Resilience at Local Level'. *Sourcebook: Strengthening the Resilience of Tsunami-Affected Communities in India and Sri Lanka*. (Ottawa: IDRC Books)

Twigg J 2009, *Identifying Partnership Needs and Opportunities*. (London: Aon Benfield UCL Hazard Research Centre, Working Papers in Disaster Studies #18). 15pp.

Kett M, Twigg J 2007, 'Disability and disasters: towards an inclusive approach'. *World Disasters Report 2007: Focus on Discrimination* (Geneva: IFRC) pp.87-109.

Twigg J 2007, *Characteristics of a Disaster-resilient Community: a guidance note*. (London: DFID DRR Interagency Coordination Group). 36pp.

Benson C, Twigg J 2007, *Tools for Mainstreaming Disaster Risk Reduction: Guidance Notes for Development Organisations*. (Geneva: IFRC/ProVention Consortium). 184pp.

Twigg J, Benson C 2002, 'Risk reduction: challenges and opportunities'. *World Disasters Report 2002* (Geneva: IFRC) 8-39.

Twigg J 2001, *Sustainable livelihoods and vulnerability to disasters* (London: Benfield Greig Hazard Research Centre, Disaster Management Working Paper #2) 18pp.

Twigg J 1996, 'Partnership against Disasters: the role of regional networks'. *Disaster Management* 8(3): 108-113.

Disaster Risk Reduction (Overseas Development Institute)

Research and author *Disaster Risk Reduction: mitigation and preparedness in development and emergency programming*

Corporate Social Responsibility (DFID)

Principal investigator, study on 'Corporate social responsibility and natural disaster reduction'

NGO Initiatives in Disaster (British Red Cross)

Investigating NGOs' involvement in natural disaster preparedness and the mitigation factors affecting this over a 3 year period.

Social Vulnerability, Sustainable Livelihoods and Disasters (DFID)

Co-principle researcher

NGO Initiatives in Disaster Risk Reduction (British Red Cross)

Team leader for this three year research project investigating NGOs involvement in natural disaster preparedness and mitigation factors affecting this.

DRR in Tsunami-Response Programmes (Disasters Emergency Committee)

Consultant for review of DRR in response and recovery programmes following the 2004 Indian Ocean Tsunami.

Relevant Teaching Modules

Resilience (UCL)

Module Director for EngD in Urban Sustainability and Resilience

Disaster Risk Management (UCL)

Module Director for MSc in Earthquake Engineering with Disaster Management and MSc in Geophysical Hazards

Natural Hazards, Social Vulnerability and Disaster Risk Management (UCL)

Module Convenor for MSc in Environment, Science and Society

Guest lecturer for the MA/MSc course on Participatory Processes: Building for Development for the Development Planning Unit (UCL), the Centre for Development and Emergency Practice (Oxford Brookes University) and Institute of Development Studies (Sussex University).

Wider dissemination projects

John is committed to the dissemination of his research and has established and continues to manage a number of web-based information resources. This include:

- Originator and co-ordinator of Disaster Reduction Gateway webpage www.aburhc.org
- Originator and co-ordinator of Disability and Disaster web page www.abuhrc.org
- Moderator, natural-hazards-disasters email discussion group www.jiscmail.ac.uk/natural-hazards-disasters (2001-5) and environment-disasters discussion group www.jiscmail.ac.uk/environment-disasters



Profession

Architect and Housing Specialist

Current Position

Consultant

Qualifications

MSc. in Development Practice - Centre for Development and Emergency Practice, Oxford Brookes University.

Dissertation: 'The Role of Architects in Development Practice: Challenges for Architectural Training' (with a 30min video), 2005.

Bachelor of Architecture (B.Arch), Bangladesh University of Engineering and Technology.

Dissertation: 'Rural Housing Development in the Cyclone-prone Coastal Areas of Bangladesh: Special Focus on Ethnic Minority Rakhaing Community', 1999.

Publications

Post-Cyclone Sidr Family Shelter Construction in Bangladesh: A Documentation of Plans and Processes 2007-2009, UNDP and Disaster Management Bureau 2010.

Key Data

Rumana is a Development Practitioner with nine years of varied experience, working in conflict, emergency and development contexts, involving programme and policy development and implementation, community development, research, architectural and project management. She has an architectural background and over ten years of varied experience, working in conflict, emergency and development contexts, forming programme and operational policy, coordination and implementation strategy, working in community development, disaster management, research, monitoring and evaluation and construction management.

Rumana has significant experience in research and communication, delivering training, facilitating workshops and she has a special interest in communication, dissemination, advocacy and media work. She enjoys working in a politically challenging environment and in new contexts. She works with individuals by appreciating and supporting, building team spirit and confidence of those she works with. She likes taking a leading role to implement ideas into action.

Relevant Projects

Disaster Risk Reduction and Housing Consultant Recovery Initiative Sumatra Earthquake (UN-Habitat)

Rumana undertook a Scoping Study and developed concept notes for UN-Habitat's strategy; she also promoted the Safer Cities- Safer Schools campaign and mainstreamed Disaster Risk Reduction issues in National Guidelines, by liaising with the Disaster Management Authority and Education Ministry. Rumana also provided technical support to the government's permanent housing reconstruction process and advocated for the need of the marginalized communities, such as renters, squatters and the affected landless population.

Post-Cyclone Sidr Family Shelter Construction in Bangladesh (UNDP/Shelter Working Group)

As evaluation leader and author Rumana; assessed the major agencies response 2007-2009; produced a publication on the overview of housing reconstruction and conducted field visits in four districts to interview house owners, field staff and builders of the housing programme.

Southern Pakistan Earthquake Recovery (UN-Habitat)

Rumana led the Early Recovery Housing Assessment team and produced a proposal for the National and Provincial Disaster Management Authorities on Disaster Risk Reduction to introduce earthquake resilient house construction techniques for traditional mud houses. She also facilitated the Strategic Planning Workshop for the UN-Habitat's future programming in Pakistan, produced architectural design and proposals for school earthquake safety programme for the reconstruction of a Primary School and visited the 2005 Earthquake affected areas of Kashmir to review the progress of reconstruction.

Bangladesh Cyclone Response (Oxfam)

As part of her role as shelter coordinator Rumana; developed emergency shelter, housing and early recovery strategies and programming options by

http://www.undp.org.bd/projects/pr odocs/DRF/Post-Cyclone%20Sidr%20Family%20Shelter%20Construction%20in%20BGD%20_Final%20version.pdf

Contributing author - 'Reflections: The Mess of Practice' in Place Makers Guide To Building Community by Nabeel Hamdi, EarthScan 2010.

Lessons from Aceh: Key Considerations in Post Disaster Reconstruction by Jo da Silva, Arup and Disaster Emergency Committee 2010.
www.arup.com/internationaldevelopment

Shelter Non Food Item Standards, UN 2009.
http://www.sheltercentre.org/sites/default/files/Selecting%20NFIs%20for%20Shelter_1.pdf

Co-authored and presented paper at the "Third Housing and Hazard (H&H) International Conference", Bangladesh – 'Rural Housing Initiatives by Development Agencies: Miles to Go', in Seraj, SM, Hodgson, RLP and Ahmed, KI (eds) (2000) Village Infrastructure to cope with the Environment. Bangladesh University of Engineering and Technology (BUET), DFID and University of Exeter, UK
[HTTP://WWW.GROUPS.EX.AC.UK/HOUSINGANDHAZARDS/ARA%20ET%20AL%202000.PDF](http://WWW.GROUPS.EX.AC.UK/HOUSINGANDHAZARDS/ARA%20ET%20AL%202000.PDF)

doing multi-sectoral assessments and by advising for future and long-term programme options. Provided technical advice on appropriate design, materials and construction techniques for community based integrated shelter and disaster risk reduction to programme staff and the Emergency Shelter Cluster.

Southern Pakistan Flood and Cyclone Response (UN Habitat)

Rumana conducted a joint assessment with NGOs and other UN bodies led by the UNDAC Team (United Nations Disaster Assessment Committee) in the flood and cyclone effected remote areas of Sindh and Balochistan provinces of Southern Pakistan. She was a technical focal point for the International and national NGOs, Red Cross and Red Crescent, and formulated technical guidelines for Safer Reconstruction of traditional adobe houses.

Northern Pakistan Earthquake Reconstruction (UN Habitat)

Rumana managed the Housing Reconstruction Centre of Poonch District (one of the three effected districts in Kashmir) on behalf of the Government's Earthquake Reconstruction and Rehabilitation Authority (ERRA). She also produced training materials, delivered hands-on training, disseminated technical and policy information to the building trade professionals, NGO staff, Pakistan Army, government officials, homeowners and self-builders.

Northern Pakistan Earthquake Reconstruction (Save the Children USA)

Rumana developed the strategy for the reconstruction and recovery phase of shelter, basic health units and schools. She also prepared training modules and setting up training and workshops for the field staff, local builders, craftsmen, house owners, women and children on improvement of self-built houses.

Tsunami Reconstruction Aceh, Indonesia (Oxfam International)

Rumana designed Oxfam's Core Shelter construction programme in consultation with the beneficiaries and the local builders. She also managed and implemented the permanent 'Core Shelter' construction programme and relocation planning of Tsunami affected rural settlements of Aceh Jaya District. She co-ordinated with the multi-sectoral team to ensure an integrated approach to reconstruction was undertaken. Rumana also produced dissemination materials on safer construction methods and implemented a pilot project.

Disaster Risk Reduction through Rural Housing Improvement (Grameen Bank)

Rumana worked with local NGOs and builders on 'Participatory Action Research in Flood-prone Rural Areas', to develop 'building-for-safety' options for low-income housing. She also organised workshops and produced research reports to disseminate 'building-for safety' options.

Disaster Risk Reduction through Building for Safety Promotion (British Council/DFID)

Rumana worked on 'Participatory Action Research in Ethnic Minority Settled Flood-prone Rural Area' for Disaster Mitigation programme and produced a dissemination video. She assessed local construction practice and implemented 'building-for-safety' options for low-income housing.



Profession

Architect

Current Position

Consultant, Arup International Development

Qualifications

MA (Cantab) Architecture

PG. Diploma in Architecture

Professional Associations

Royal Institute of British Architects

Committees

Architecture sans Frontieres UK (Associate)

Engineers without Borders UK

Publications

Lessons from Aceh: Key Considerations in Post-Disaster Reconstruction, contributing author (Practical Action Publishing, 2010)

Indonesia: Understanding agency policy in a national context in Lyons and Schilderman eds. (2010) *Building Back Better: Delivering people-centred housing reconstruction at scale* (Practical Action Publishing, 2010)

Key Data

Victoria is a Consultant in the International Development team. She trained as an architect and is completing an MA in Development and Emergency Practice.

Following the Indian Ocean Tsunami, Victoria worked for UN-Habitat in Aceh, Indonesia, where she was directly involved in community-driven planning, design and reconstruction. She subsequently assisted in the development the "Shelter Training" a modular training course for the humanitarian shelter community, while working at the Shelter Centre, Geneva.

Victoria is currently project manager for our work supporting Habitat for Humanity in Haiti and our collaboration with the World Economic Forum on the Disaster Resource Partnership. She recently presented her work using community-based research methodologies to assess Habitat for Humanity's tsunami-response shelter programmes at the World Urban Forum and has contributed to *Lessons from Aceh* and *Building Back Better*.

Victoria has particular expertise in community participation, sustainable construction, low-income housing and post-disaster reconstruction. She is also an Associate with Architecture Sans Frontieres UK and she provides training for Engineers Without Borders UK.

Relevant Projects

Sustainability assessments of tsunami-response shelter programmes Indonesia, Thailand, Sri Lanka, India (Habitat for Humanity International)

Consultant for the sustainability assessment of Habitat for Humanity's tsunami-response shelter programmes - over 16,000 houses in Sri Lanka, India, Thailand and Indonesia - using Arup International Development's ASPIRE tool. HFHI specifically wanted to evaluate the impact of their tsunami-response shelter programme on the sustainability of communities and the sustainability of families' livelihoods. Field trips included participatory workshops with communities, household questionnaires and stakeholder interviews in addition to training local staff in sustainability assessments and participatory rapid appraisal techniques.

Earthquake-response shelter programmes, Haiti (Habitat for Humanity GB)

Project manager for Arup's support to Habitat for Humanity's response to the earthquake in Haiti. Arup are providing strategic advice on programme design and management, advice on appropriate design codes, structural review of transitional shelter and core housing designs, and guidance on damage assessment and site appraisal as well as the incorporation of sustainability into their programme design using ASPIRE as a planning tool.

Lessons from Aceh (Disasters Emergency Committee)

Project manager and contributing author for this publication which sets out the key topics and challenges in post-disaster reconstruction in Aceh, Indonesia. It provides examples of best and worst practice and highlights key lessons learned to inform future reconstruction programmes.

Low Income Housing, Philippines (Habitat for Humanity International)

Project manager for a design, quality, cost-efficiency and sustainability and review of low-income housing built by Habitat for Humanity in Manila, Philippines. Using the ASPIRE tool developed by Arup International Development, Victoria conducted an assessment of the project's impact on poverty reduction and sustainability through stakeholder interviews.

Owner-driven reconstruction (IFRC)

Co-author of a paper on the methodologies of owner-driven reconstruction adopted in Aceh after the Indian Ocean Tsunami and the key challenges and constraints in implementing and scaling-up owner-driven programmes. Presented at the *Development from Disaster: Scaling up Owner-Driven Reconstruction* Conference at LSBU and culminating in the paper *Indonesia: Understanding agency policy in a national context*.

Disaster Resource Partnership (World Economic Forum)

Project manager for the research and development of a global partnership of engineering and construction members of the World Economic Forum, humanitarian and development organisations, national governments and donors to enable the core strengths and existing capacities of engineering and construction companies to be mobilized during and after crises to reduce suffering and save lives.

Post-tsunami reconstruction, Indonesia (UN-Habitat)

Consultant village planner for UN-Habitat's community-driven reconstruction programme in Aceh and Nias. Technical advice and documentation of the post-tsunami reconstruction programme including community-based mapping, damage assessment, action planning, spatial planning, housing design and reconstruction. Production of environmental assessments and liaison and coordination with donors, local government and other agencies/NGOs.

Shelter Training and Shelter Module (Shelter Centre)

Project manager coordinating work on several projects including drafting field guidelines on refugee camp planning, development of the Shelter Training (a modular training course for the international humanitarian community) development of the Shelter Module (a prototype emergency family shelter for humanitarian operations).

Participation and Vulnerability Training (Architecture sans Frontieres UK)

Associate contributing to the development and provision of training for built environment professionals in participatory techniques (including participatory assessment and community action planning) and vulnerability reduction (including mapping assets, capacities and coping strategies through participatory techniques).



Profession

Architect

Current Position

Consultant Arup International
Development

Qualifications

MA Development and Emergency
Practice

PG. Diploma in Architecture
(RIBA II)

MA (Hons) Architecture (RIBA I)

Professional Associations

Royal Institute of British Architects
(Student Member)

Publications

Building Relevance: Post Disaster
Shelter and the Role of the
Building Professional
(CENDEP, 2009)
([http://www.brookes.ac.uk/schools
/be/research/cendep/shelters.html](http://www.brookes.ac.uk/schools/be/research/cendep/shelters.html))

MA Dissertation: A Community
Focused Exploration of
Participation and Power in
Decision Making in
Large-Scale Urban Regeneration:
Learning from Stratford City
(2009)

Committees

Architecture sans Frontieres UK
(Associate)

Key Data

Elizabeth Parker is a Consultant in the International Development group. Originally trained as an architect she has extensive experience of community consultation and stakeholder engagement, both in the UK and internationally.

She has worked in Ecuador as a Project Manager for Engineers Without Borders coordinating a training programme promoting seismic resistant construction. Most recently she worked at RedR where she developed a strategic shelter strategy and delivered training on post-disaster shelter. Elizabeth has a Masters in Development and Emergency from Oxford Brookes University.

Elizabeth has particular expertise in community participation, urban regeneration, sustainable construction and post-disaster reconstruction and has worked on a range of architectural and sustainability projects. She is an Associate with Architecture sans Frontieres UK and develops and provides training for both ASF UK and Engineers without Borders UK and has continued in her role as RedR shelter advisor.

Relevant Projects

Asian Cities Climate Change Resilience Network (Rockefeller Foundation)

Consultant for Arup's ongoing programme management and technical assistance to the Rockefeller Foundation's Asian Cities Climate Change Resilience Network Initiative, which aims to build climate change resilience for poor and vulnerable urban communities. Providing quality assurance and review of partner documentation, identifying next steps and projects outcomes for Indonesia, Vietnam and India.

Earthquake-response shelter programmes, Haiti (Habitat for Humanity GB)

Consultant for Arup's support to Habitat for Humanity's response to the earthquake in Haiti. Arup are providing strategic advice on programme design and management, advice on appropriate design codes, structural review of transitional shelter and core housing designs, and guidance on damage assessment and site appraisal as well as the incorporation of sustainability into their programme design using ASPIRE as a planning tool.

ASPIRE

Project manager for ongoing development of ASPIRE, a sustainability and poverty reduction assessment tool for infrastructure projects in the developing country context. ASPIRE is a joint collaboration between Arup and Engineers Against Poverty. Elizabeth has also undertaken ASPIRE assessments including for the Sabre Kindergarten, Ghana, a prototype intended to inform the development wider government initiative.

Strategic Shelter Sector Adviser (RedR)

Project Manager for the research and development of a 3 year Shelter Sector Strategy for RedR -assessing their current capacity and the needs of the sector. Coordination and management of a shelter training course.

Low Income Housing

Consultant for the research and meta-analysis of low income housing. The scope of this study is to analyse regional best practise examples and understand how the gap in provision of affordable and quality housing can be addressed. The research covers low income housing for the regions of Australia, Africa, Asia, Americas and Europe.

Livelihoods Assessment (Resource Centre for Participatory Development Studies)

A livelihoods assessment of two communities affected by the 2004 Tsunami in Nagapatinam, Tamil Nadu, India using participatory rapid appraisal techniques and methods (PRA) focusing on community coping measures, current levels of vulnerability and impact of rehabilitation activities following the Tsunami.

Participation and Vulnerability Training (Architecture sans Frontieres UK)

Associate contributing to the development and provision of training for built environment professionals in participatory techniques (including participatory assessment and community action planning) and vulnerability reduction (including mapping assets, capacities and coping strategies through participatory techniques).

Stratford City Regeneration Community Engagement (Discover)

Project Manager responsible for developing flexible, appropriate consultation and participation methods and processes to ensure that the views of vulnerable and socially excluded children and families are heard and presented to decision makers. She facilitated workshops and delivered feedback for the key developers including Westfield, Olympic Delivery Authority, Lend Lease and the London Development Agency. This work informed a number of key areas including community facilities, public spaces and the Olympic park.

Seismic Resistant Construction (Engineers Without Borders)

Project Manager working with community groups in Ibarra, Ecuador to disseminate information and encourage good practice in the appropriate use of different construction materials such as adobe brick, concrete block and rammed earth for seismic resistant buildings. This including participatory workshops and practical hands-on demonstrations. To ensure the sustainability of the project we also worked with La Universidad Catolica de Ibarra to train their students with the relevant skills to facilitate this work when we had left.