

TERMS OF REFERENCE

Consultant to deliver a Rapid Damage Assessment (RDA) approach, methodology and training

PREPARE Program Trinidad and Tobago

Title: RDA Consultant

Based: Trinidad and Tobago

Period: April-August 2021

Duration: c. 60-90 days

Start date: 1 May 2021

Contracting Org: Miyamoto International Inc.

Expected regional travel: None

Background

After a disaster, particularly a destructive earthquake, but also severe floods, landslides and windstorms, there is an urgent need to quickly check the integrity of buildings and transport networks affected by the event; to restore services and shelter the displaced. Should engineers and/or architects apply their own evaluation methodologies, there is a greater chance of conflicting evaluation reports among agencies and professionals. Such circumstance will add to the difficulties of the disaster response and recovery.

To minimize the possibility of conflicting reports and misunderstandings, it is proposed to develop a standardized (basic) rapid damage assessment (RDA) tool and protocol for structures, and to train national engineers and architects in the process. To this end Miyamoto International, under the guidance of the Office of Disaster Preparedness and Management and national engineering authorities, is seeking a consultant to deliver a standardized Rapid Damage Assessment (RDA) approach, methodology, digital application and training for Trinidad and Tobago.

Led by the Office of Disaster Preparedness and Management, Ministry of National Security, Miyamoto International is currently implementing the *Urban Disaster Resilience and Preparedness in Trinidad and Tobago* – PREPARE TT Program. The program is made possible through the United States Agency for International Development, Bureau for Humanitarian Assistance (USAID BHA). The PREPARE TT Program seeks to strengthen seismic disaster risk reduction and preparedness measures in the country. This is achieved by advancing the risk management policies and practices of key institutions. The result would be the reduction of lives lost, persons injured and displaced as well as less social and economic disruption.

Miyamoto International (“Miyamoto”) is a global, multi-hazard engineering and disaster risk management firm that builds resilience to sustain economies, safeguard communities and save lives around the world. Built on decades of engineering expertise in the field, as well as frontline

experience responding to more than 100 disasters, Miyamoto's specialists support how partners address the economic, political, social, sustainability and resiliency challenges in disaster risk reduction and post-disaster recovery and reconstruction.

Scope of work

The consultant may be an individual or firm. The consultant will be responsible for adapting, developing and facilitating a post-impact Rapid Damage Assessment (RDA) instrument and training course for Trinidad and Tobago on or before the end of August 2021. The activities are detailed below. The RDA will target all buildings as well as bridges. The objectives of the consultancy will be under the general coordination of the RDA Technical Advisory Committee (TAC).

Tasks include, but are not limited to:

1. Meet with the TAC on the expectations, suggested documents and agencies to consult to identify current practices, protocols, gaps and additional needs.
2. Desk review of the [ATC 20](#), PREPARE program RDA adaptations and other TAC recommended documentation as the base for the national RDA, recommending in general the adaptations required. Consult where necessary national stakeholders. Consider the most common systems of building construction (typologies) with one or more levels, the particularities related to self-built houses as well as common road and bridge designs used in T&T.
 - a. Compile a brief report on the issues and recommendations regarding the proposed RDA as well as an accompanying a plan of action with timelines for delivering a national RDA. Include recommendations for the institutional use of the RDA tool within current building inspection processes public and private sector.
3. Develop the draft and final RDA instrument (hardcopy) and test in the field.
4. Validate the damage assessment sheet with the private sector and government institutions with competence in the matter. Verify the results through more detailed assessments of targeted buildings & revise the tool as appropriate, and submit a report on the findings and recommendations.
5. Develop an easy to use digital application for the Rapid Damage Assessment tool and easy to understand user manual.
 - a. The application must be capable of (but is not be restricted to) capturing geo-referenced data and images within the file.
6. Develop the (draft and final) nationally adapted rapid damage assessment tool and training manuals for participants and instructors.
 - a. The manuals should include photos, graphic information and any other means that help clarify and understand the concepts and what is asked in the RDA tool.
 - b. The manuals and tool should include the recommendations of RDA Technical Advisory Committee and the findings of the validation process of the tool.
 - c. The manual must include the content of the flag/seal/tag classification (red, yellow and green) to be affixed.
 - d. It should also include a list of equipment (safety and other) to be used by the person conducting the assessment.
 - e. The manual will include comments on related international tools, which can help improve the quality of the final product and serve as reference manuals.

- f. To obtain a final version of the manuals conduct a full review with the TAC.
7. Facilitate the RDA training separately for practitioners and instructors and revise manuals from lessons learned.
8. Liaise with professional training institutions identified by the TAC on the institutionalizing of the RDA training.
9. Develop a plan of action to address resource gaps and otherwise improve the technical capacity of institutional actors (civil and structural engineers and architects) to implement a RDA system in stages which include:
 - a. RDA procedure guide and data collection tool according to national industry best practices;
 - b. Registration and certification system for construction professionals in RDA;
 - c. Guidelines for contacting owners / residents before, during and after the deployment of evaluators of buildings for RDAs
10. In consultation with the ODPM, update the protocol for the application of the rapid damage assessment tool in an emergency/disaster.
11. Submit a close-out report on the RDA development process and lessons.
12. These documented products must be presented in MS Excel, Word and PDF format, written in English.

Consultant education and experience

Knowledge & Education

The consultant will be an individual or firm and should comprise:

- Professional in civil/structural engineering, architecture who demonstrates verifiable technical knowledge of damage analysis in post-earthquake structures and risk management.
- Engineers and architects must be registered by the BOETT or Board of Architects (BoATT) respectively.
- Qualifications should be supported by verifiable documentation.

Experience

- At least 10 years experience in multiple construction typologies, materials and construction technologies of one and more stories
- Minimum professional experience of 10 years (practicing –design and construction).
- Coordinator and/or participation in research projects on construction technologies and/or in comprehensive risk management
- Proven experience in evaluations of damage to structures by earthquakes in the country or abroad would be an asset.
- Knowledge of the normative and regulatory framework of Trinidad and Tobago, related to construction.
- Experience in the development of technical training manuals and digital data collection applications.

Skills

- Results oriented.
- Teamwork: with the ability to work with high-level partners and stakeholders.
- Ability to facilitate meetings and workshops, extract main ideas in discussions during meetings, and systematize information into actions and next steps.
- Skills of how to express ideas and make them easily perceived by stakeholders.
- Excellent organizational, time management and problem-solving skills.
- Able to initiate, with a high level of professionalism and integrity.
- Fluent in the English language, written and verbal.
- Competent in MS Office and basic digital data collection applications.

Other desired qualifications include:

- General experience working with international development agencies.
- Experience in project development in some of the following topics: materials research and construction technology, disaster risk management, technical training; equipment utilization and deployment.

- **Application**

To apply, please send the following documents before **26 April 2021**, to **procurement@miyamotointernational.com**

- Resume / Curriculum
- Cover letter
- Proposal concept note, level of effort, budget and schedule.

INFORMATION AND COPYRIGHT:

The selected consultant agrees to deliver all the information and supporting documentation, as well as all the files obtained in the process of developing the consultancy and to maintain the confidentiality of the information.

All information will become the intellectual property of the Government of the Republic of Trinidad and Tobago and the PREPARE TT Program.

Consultant evaluation criteria for selection

Education 20%

Experience 40%

Proposal (incl. budget and timeline) 25%

Skills 10%

Other desired 5%