

# MYANMAR EARTHQUAKE COMMITTEE

## ACTIONS & OUTLOOKS

3<sup>RD</sup> DECEMBER 2022

HYBRID SEMINAR

## Who we are..

MEC is the non-government organization that connects multidisciplinary professionals dedicated to advancing earthquake resilience.

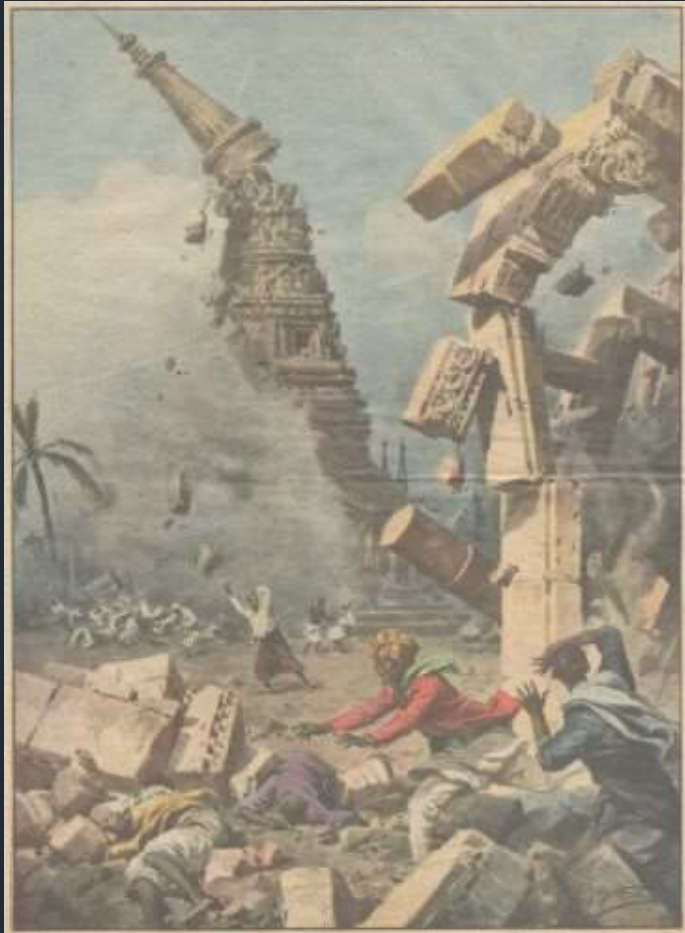
MEC was formed under Fed. MES since 1999.

## Who we are..

Professionals, researchers and students in different disciplines such as

- Geology
- Engineering
- Seismology
- Geodesy

from universities, government and non-government organizations.



Bago earthquake Illustration by A. Beltrame 1930

## Vision

Earthquake and earthquake related disasters resilience  
and mitigation.



## Mission

- To raise awareness of earthquake and earthquake related disasters
- To identify and research earthquake hazards and mitigate risks of earthquake and earthquake related disasters
- To enhance and upgrade capacity building in the fields of earthquake science and engineering
- To promote and encourage earthquake disaster risk reduction

## Collaboration..



Department of  
Meteorology  
and Hydrology  
Myanmar



EARTH  
OBSERVATORY  
OF SINGAPORE

An autonomous institute of  
Nanyang Technological University



UN HABITAT  
FOR A BETTER URBAN FUTURE



## What we do..

- Research and publication
- Seismic map preparation
- Seismic safety assessments
- Earthquake monitoring
- Earthquake awareness

## Paleoseismic field studies



**Paleoseismology** is the study of prehistoric earthquakes as preserved in the geologic record. The purpose of paleoseismology is to define the earthquake potential of a fault zone and to identify and date prehistoric earthquakes.

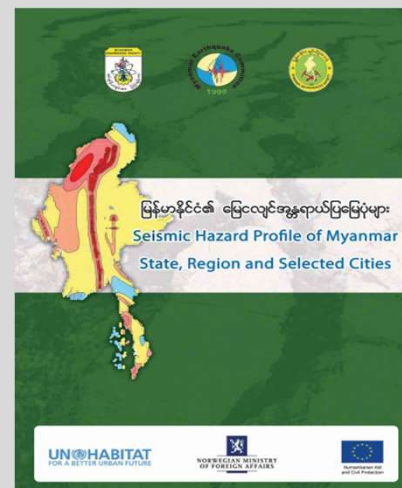
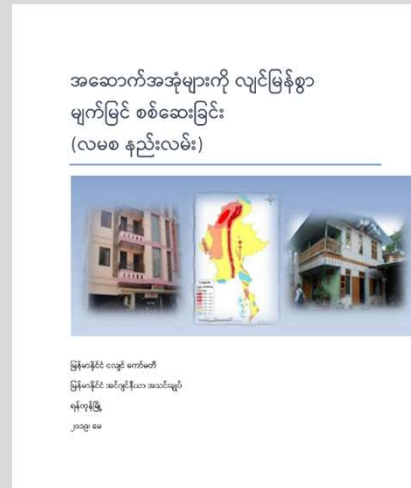
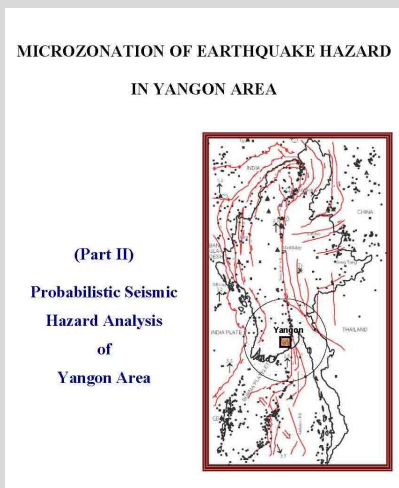
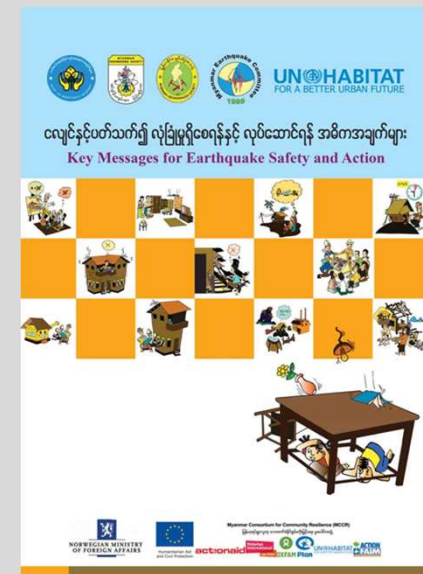
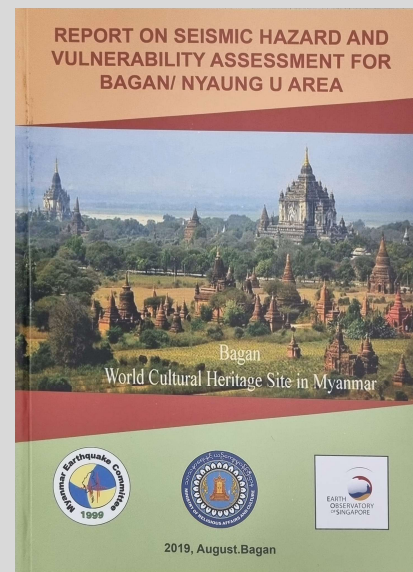
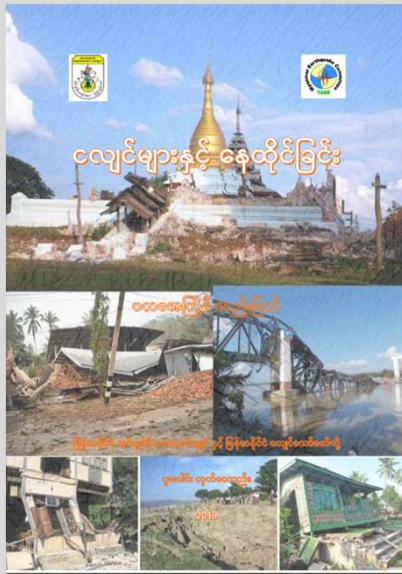
Source . [www.iris.edu](http://www.iris.edu)



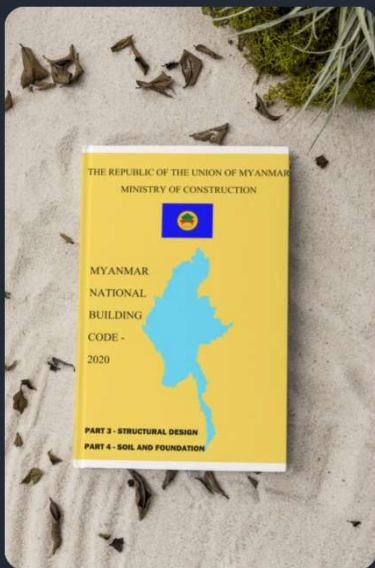
## Active fault studies



## Publications



# Seismic map development



MYANMAR NATIONAL BUILDING CODE - 2020 PART 3 - STRUCTURAL DESIGN

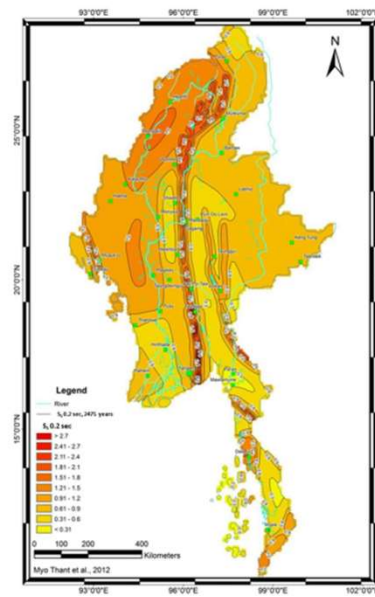


Figure 3.4.1: Maximum Considered Earthquake Ground Motion for 0.2 Sec Spectral Response Acceleration at 2% Probability in 50 Years with 5% Critical Damping, Site Class B

71

MYANMAR NATIONAL BUILDING CODE - 2020 PART 3 - STRUCTURAL DESIGN

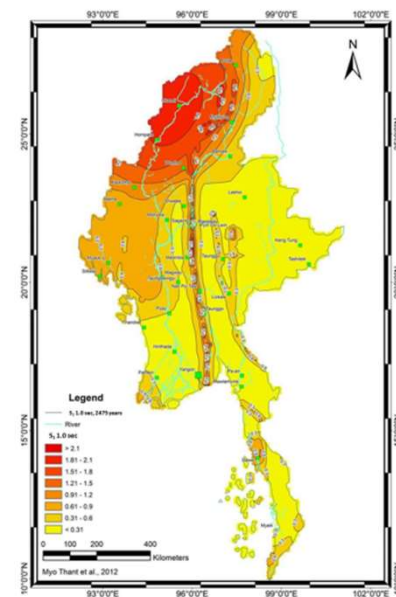


Figure 3.4.2: Maximum Considered Earthquake Ground Motion for 1 Sec Spectral Response Acceleration at 2% Probability in 50 Years with 5% Critical Damping, Site Class B

72



## Buildings and infrastructures seismic assessments





## School seismic safety assessment



## Hospital safety assessment



## Office buildings safety assessment

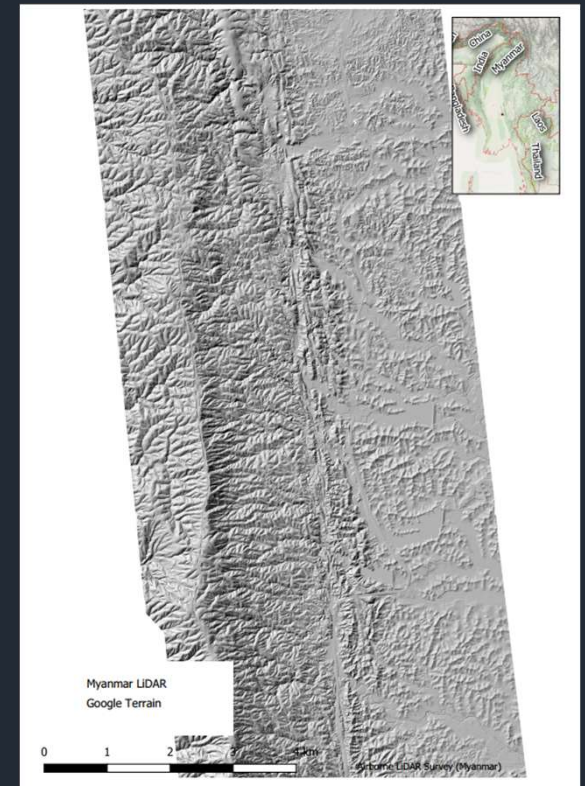




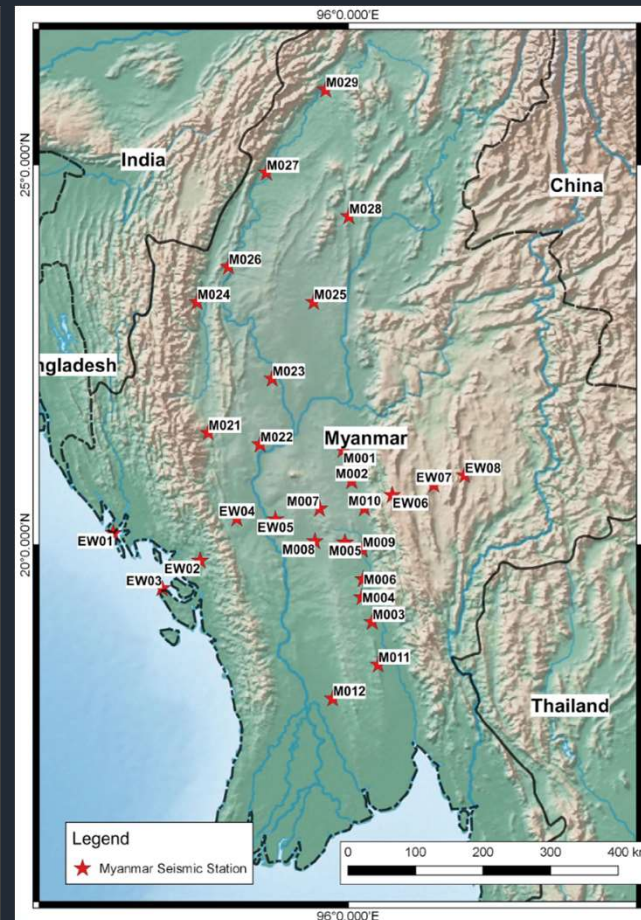
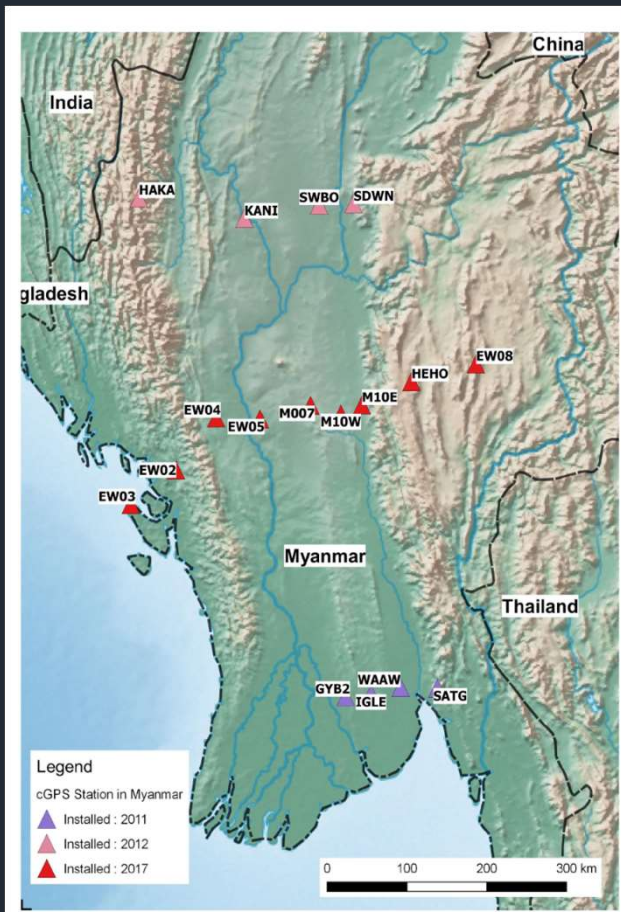
## Airborne LiDAR survey along Sagaing fault



**Airborne LiDAR** is a measurement method that can quickly obtain large-area and high-precision DEM results to determine the location and trend of active faults.



# Myanmar Seismic and GPS Network



- GPS can measure plate motions as small as 1 or 2 mm per year
- GPS can give us a detailed understanding of how tectonic plates deform
- Using GPS, we can learn how strike-slip, convergent, and divergent regions deform
- By studying deformation, we can understand the associated earthquake hazards



## Microtremor measurements



## Earthquake awareness







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20<sup>th</sup> Anniversary





**Certificate of Compliance**  
**INTEGRATED QUALITY CERTIFICATION PRIVATE LIMITED**  
hereby certifies that the Quality Management Systems of  
***Myanmar Earthquake Committee***



has been assessed and conforms to the  
Quality Management Systems  
**ISO 9001:2015**



**Scope:** Research, development and provision of assessment, training and consultancy for earthquake, natural disaster preparedness and mitigation.

## MEC Office

Consultation  
Department

Implementation  
Department

Admin and Finance  
Department

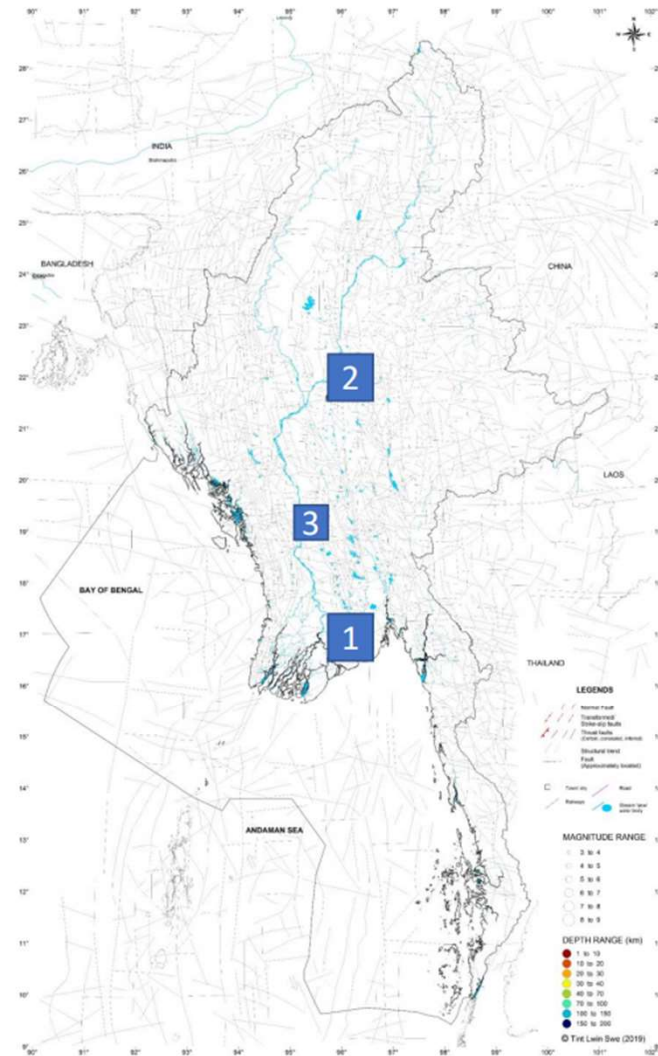
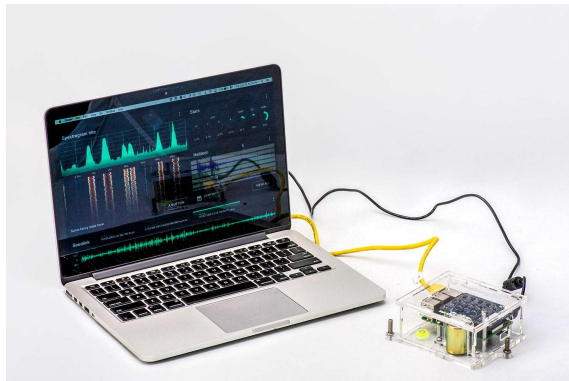
# Outlooks

- Updating PSHA maps
- Research works related to seismology and earthquake engineering
- Preparing geological map for Yangon city
- MEC strong motion and GPS network
- Seismic safety assessments

# Objectives

- To establish strong motion observatory network in Myanmar under MEC
- To study strong ground motion and earthquake risk assessment of urban areas
- To improve earthquake risk maps of Myanmar region and urban areas based on monitoring results
- To study building and ground response to strong ground motion

# MEC-SMN Project



## Phase-1

To install strong motion  
seismograph at least one at

1. Yangon
2. Mandalay-Sagaing
3. Pyay

## Installation

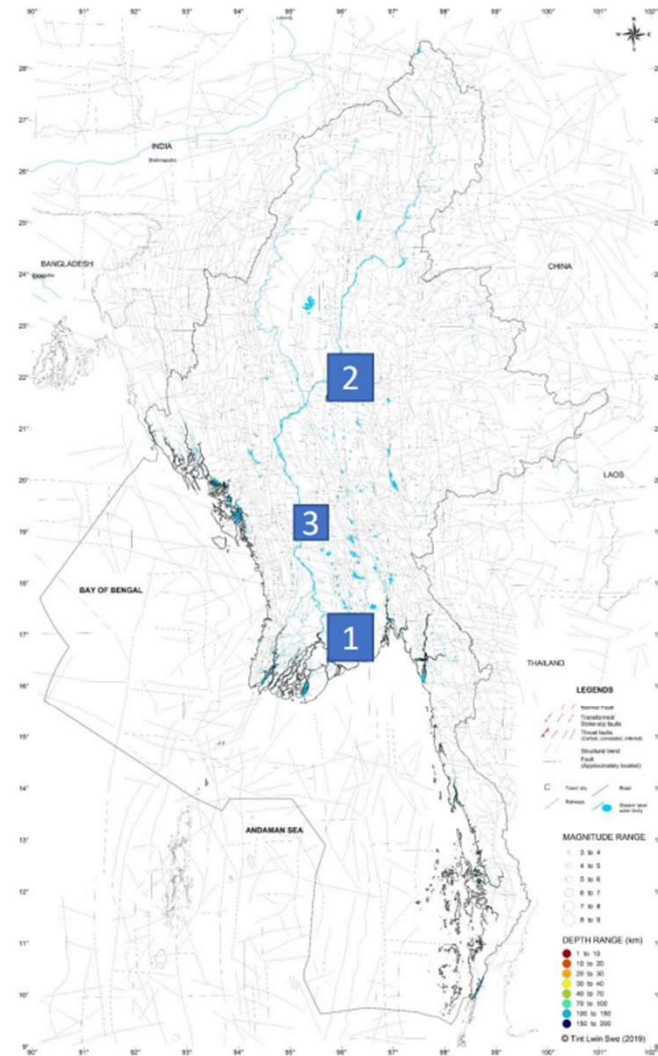
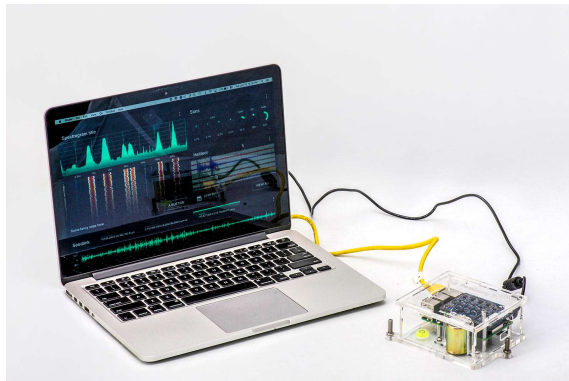
- Rock site
- Soil site

## Instrument

Raspberrysake

**RS4D | Strong Motion Seismograph**

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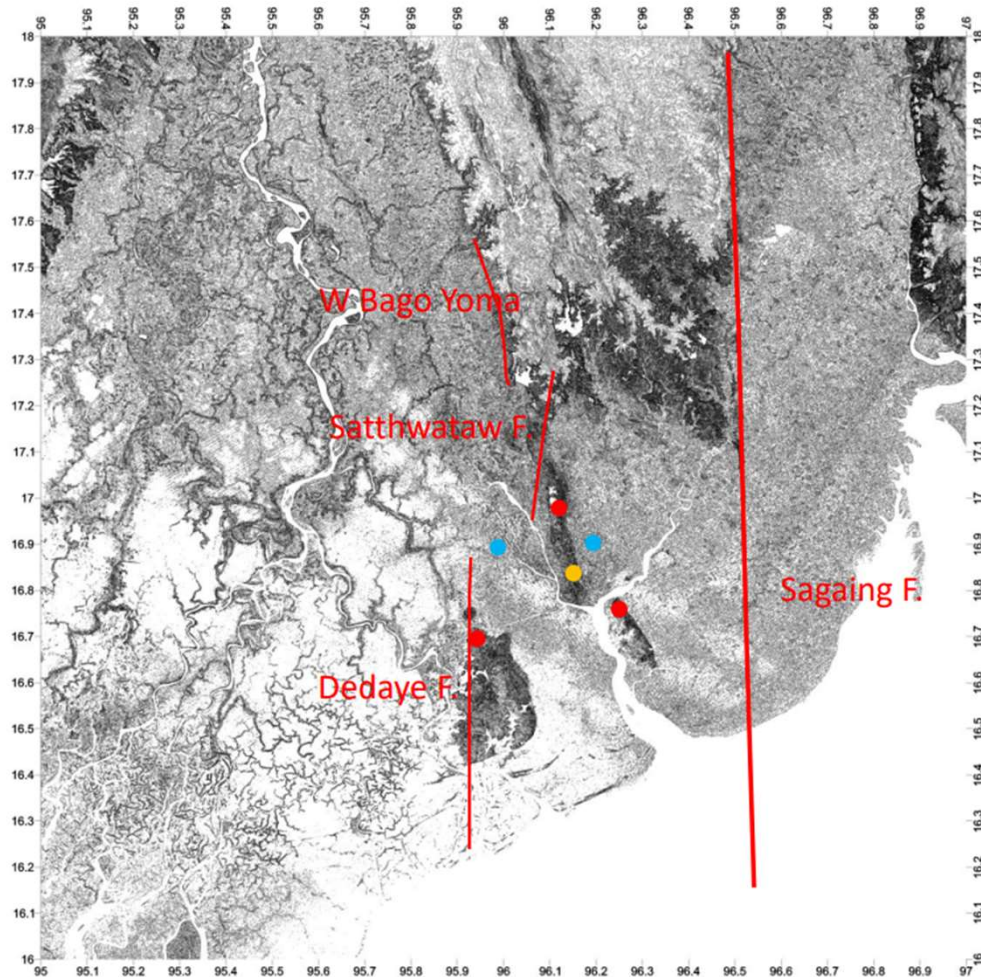
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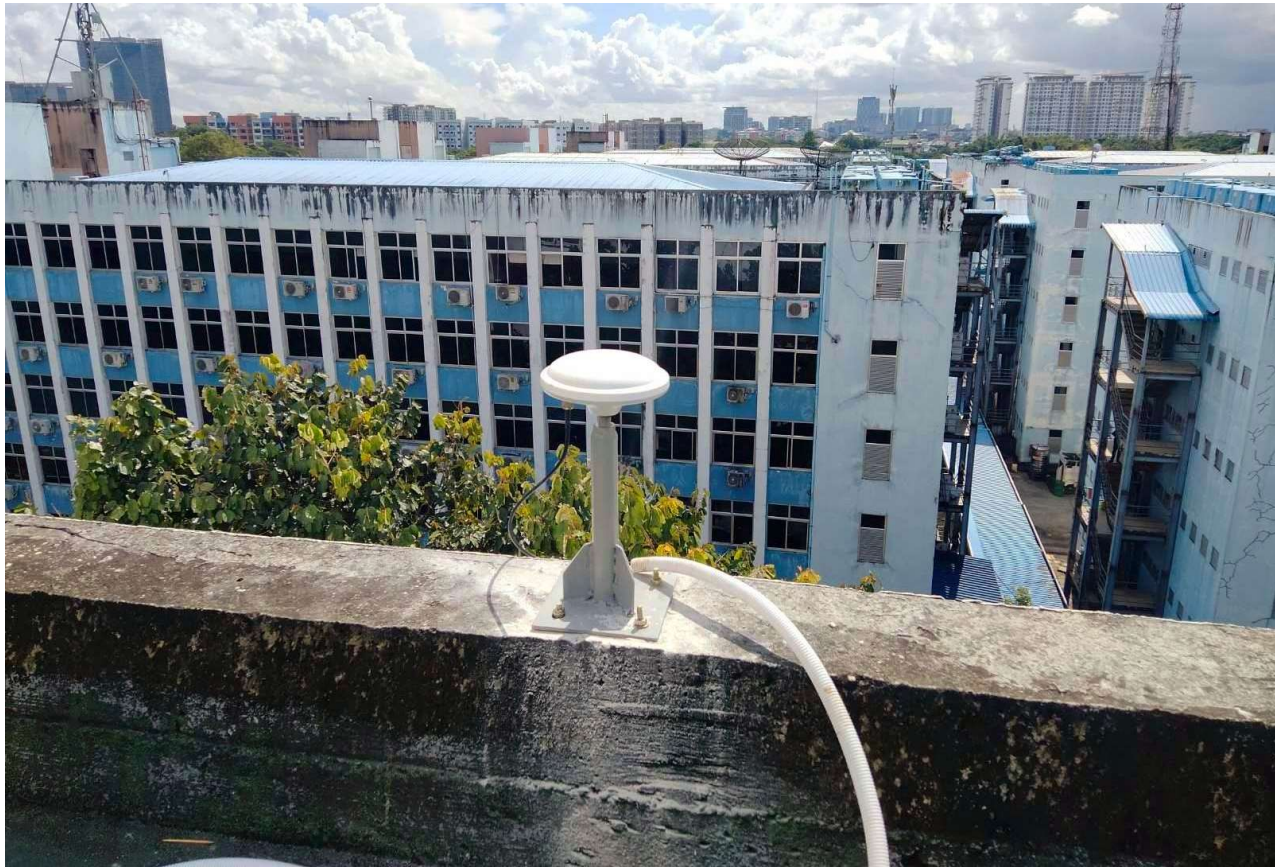
# Yangon



- Rock sites  
Proposed loc-
  1. Near Hlawga Lake
  2. Twante
  3. Thanlyin
- Engineering bedrock (installed)  
Current location-  
MES Office, Hlaing
- Soil sites  
Proposed loc-
  1. N. Dagon University,  
Geology Department
  2. Hlaing Thaya TU.



## MEC GPS installation













A young boy with dark hair and a white face cream patch on his cheek is looking down at a stack of books. He is wearing a white school uniform with a red and blue striped collar. In the background, another person is visible, and there are more books on shelves.

# THANK YOU

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Myanmar Earthquake Committee