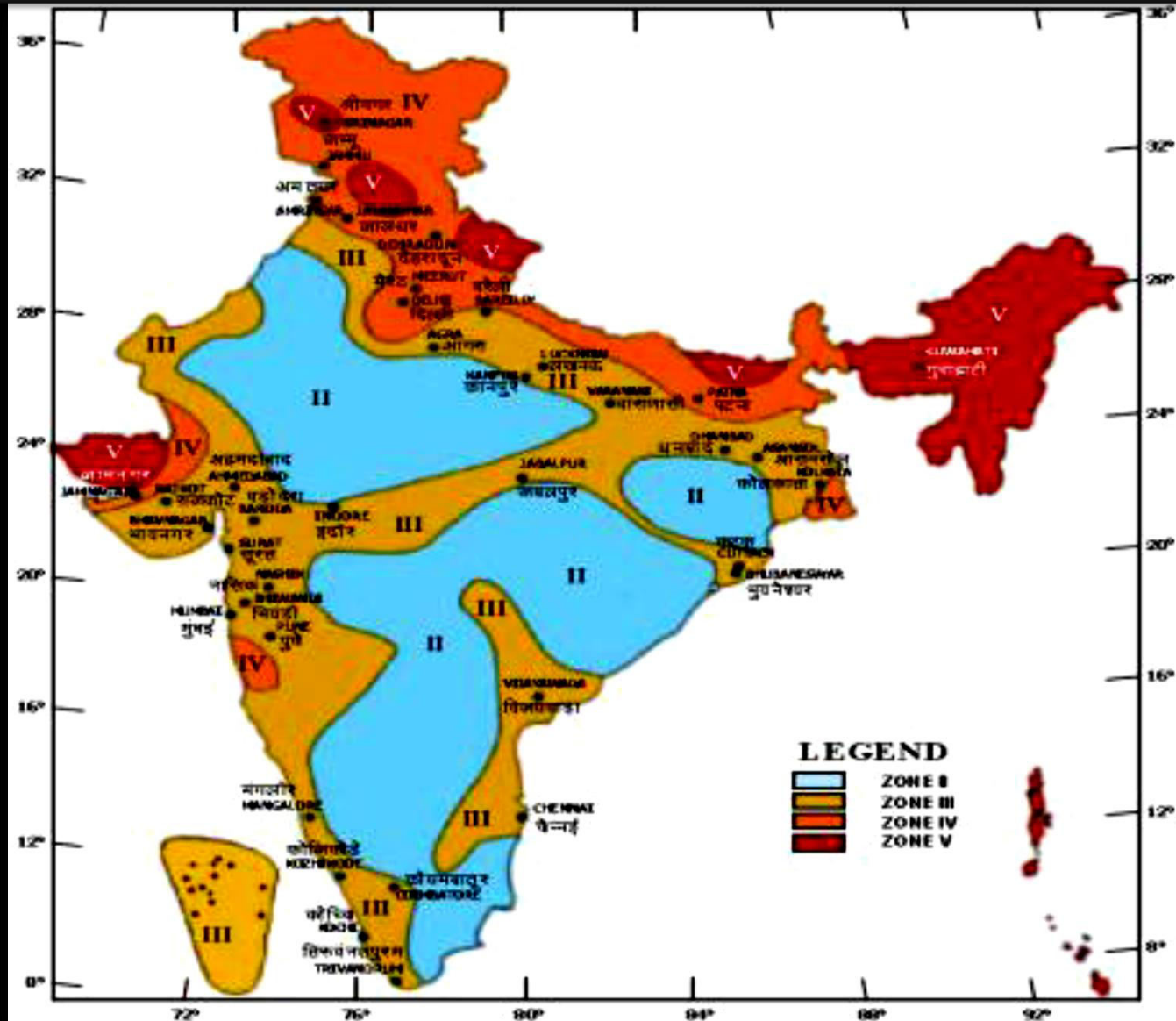




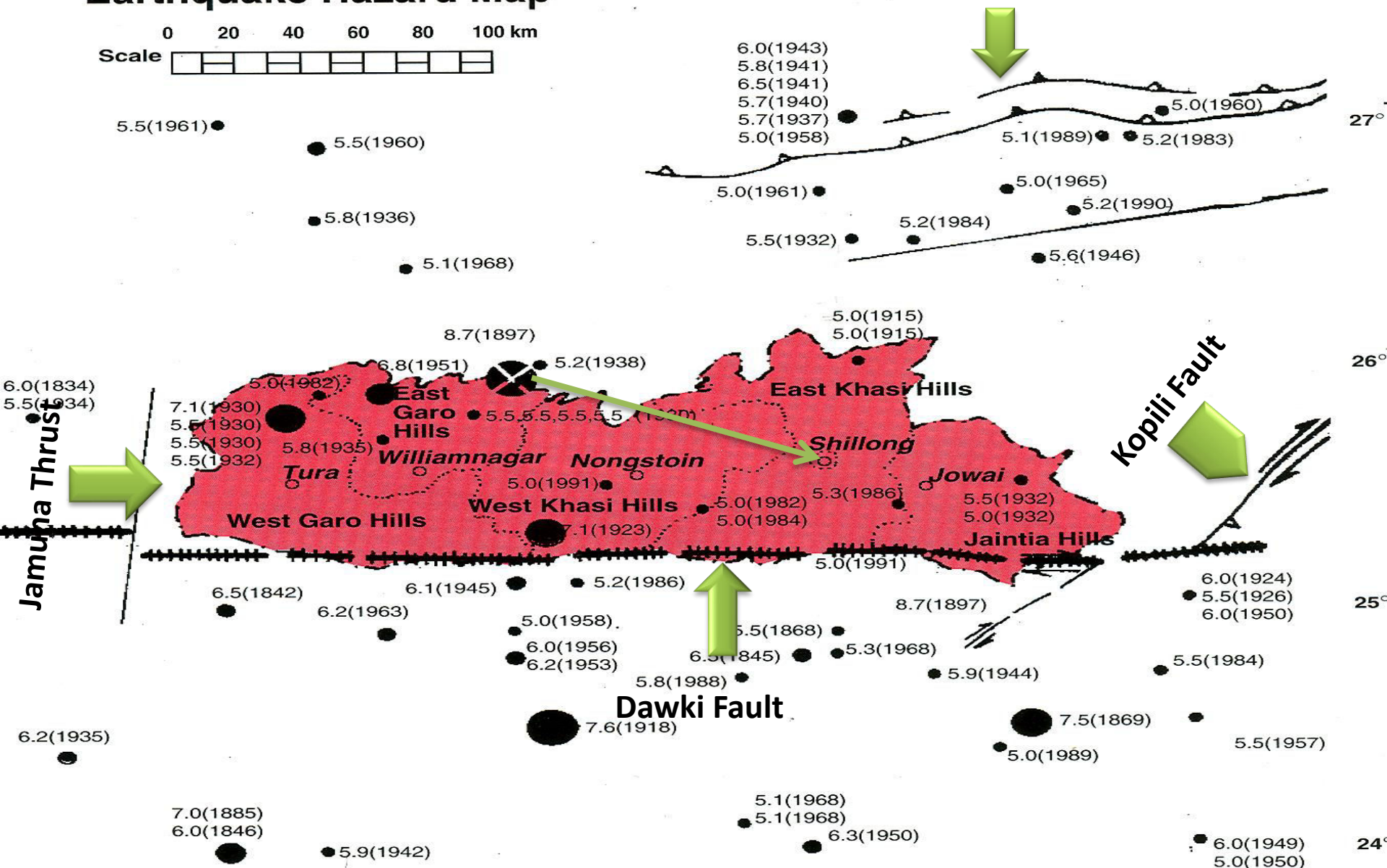
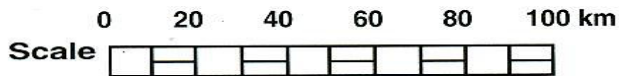
**North East Regional Conference  
on  
Earthquake and Landslide Mitigation  
- Building Resilience in North East India**

# EARTHQUAKE ZONES OF INDIA



# Meghalaya

## Earthquake Hazard Map



# EARTHQUAKES IN THIS REGION

Place	Year	Magnitude
Earthquake during the reign of king Rajeshwar Singha	1772	NA
Earthquake during the reign of king Puranda Singha	1838	NA
Earthquake caused damage in the Rang Ghar at Sivasagar, Assam	1841	NA
Cachar earthquake	1869	7.5
<b>Great Assam earthquake or Shillong earthquake</b>	<b>1897</b>	<b>8.7</b>
Srimangal earthquake	1918	7.6

Meghalaya earthquake	1923	7.1
Dhubri earthquake	1930	7.1
Jorhat earthquake	1943	7.3
Arunachal Pradesh	1947	7.7
<b>Assam earthquake</b>	<b>1950</b>	<b>8.5</b>
Manipur-Burma border	1954	7.7
Indo-Burma border earthquake	1957	7
Silchar earthquake of magnitude	1984	5.9
Manipur-Burma border	1988	7
Indo-Burma border	2011	6.4

Earthquake mitigation  
measures undertaken  
by  
Meghalaya State Disaster  
Management Authority

➤ Meghalaya Building Bye Laws was amended and notified.

Trainings on Rapid Visual Screening (RVS) have been conducted for Engineers and Architects. 57 officials were trained - out of which 7 Engineers were send to IIT, Roorkee under NSSP programme .

Safety Audit done for Lifeline Buildings in the State after Manipur earthquake.

Rapid Visual Survey was done in 400 schools of 2 districts – East Garo Hills and Ri-Bhoi district under NSSP Programme.

Retrofitting of two higher secondary school in East Garo Hills district and Ri-Bhoi district under NSSP project

60 masons trained are trained on Safe Construction, the Training was organised by DDMA, East Khasi Hills National Institute of Technology (NIT), Shillong and the Integrated Basin Development Programme (IBDP).



➤ 12 (twelve) officers drawn from various department visited Earthquake affected areas of Sikkim to study the response mechanism adopted by Government of Sikkim comprising from 21<sup>st</sup> to 24<sup>th</sup> February, 2012.

➤ Hazard Risk Vulnerability Analysis (HRVA) has been undertaken by CSIR NEIST (Centre for Scientific Industrial Research-North East Institute of Science and Technology, (Jorhat). The study is going on Earthquake Vulnerability in Shillong City

➤ National Institute of Technology, Shillong in Collaboration with Meghalaya State Disaster Management Authority (MSDMA) conducted a Study on Seismic Vulnerability Assessment of 200 School Buildings of East Khasi Hills District of Meghalaya and Methods for Reducing.

➤ Training of Incident Response System (IRS) in the 11 Districts organised by SDMA and DDMA's for the District Incident Response Teams based on Earthquake Scenario

➤Department of Urban Affairs and DDMA, East Khasi Hills Training undertaken training on safety construction in the localities of Shillong.

HRVA study was carried out in Shillong under US-AID, MHA and UNDP sponsored programme  
**City level consultation on “Developing Resilient Cities through Risk Reduction in the context of Disaster and Climate Change”**

Regular Mock drills were conducted at Educational Institutions, commercial places , office premises, Villages based on earthquake scenarios

Training programme were conducted among the People with disabilities in the districts based on earthquake scenarios

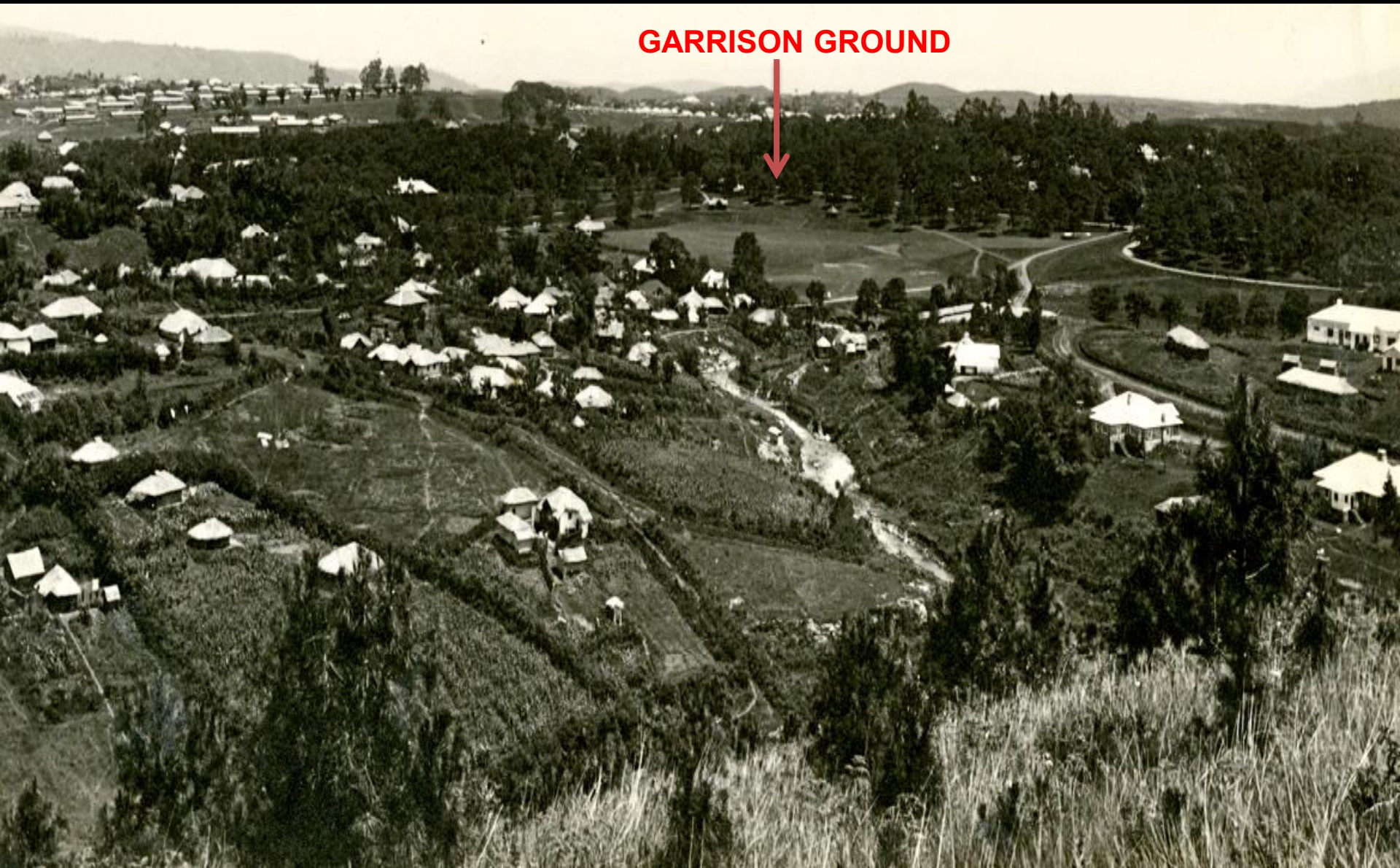
IEC materials like posters, leaflets, stickers were printed and distributed for awareness among the public

Detailed information regarding Earthquake and Landslides are incorporated in SDMP-2016 , Vol -2 Chapter 2 and 5

Joint training programmes were conducted with NEIGRIMS, NIDM, NDMA, NDRF, UNDP etc for different stakeholders of Disaster Management in the state.

SHILLONG  
OVER A PERIOD  
OF 121 YEARS....

# DENSITY OF POPULATION



**Shillong Before 1897**





**Shillong After 1897**



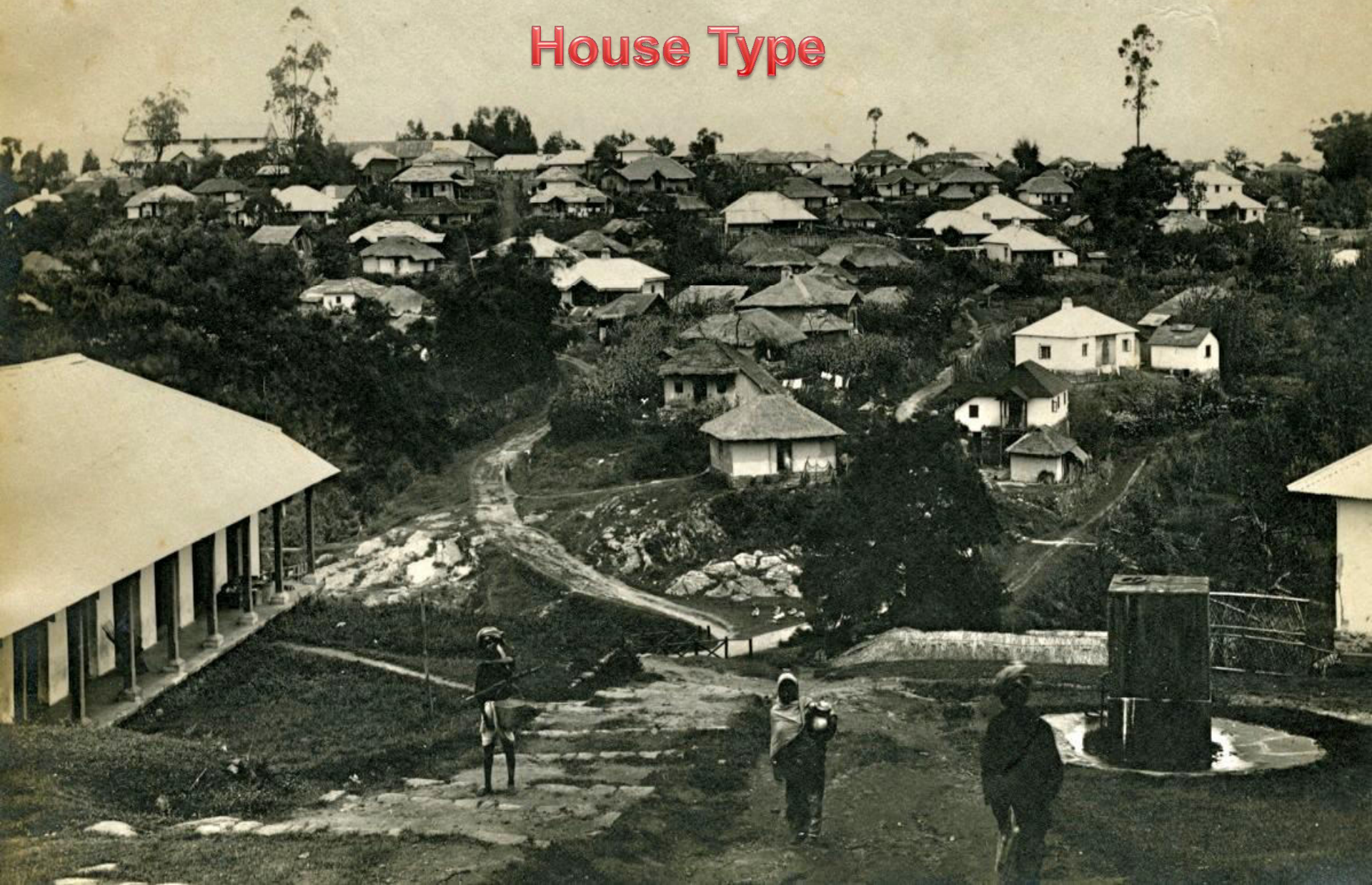
**GARRISON GROUND**



**Shillong -2018**

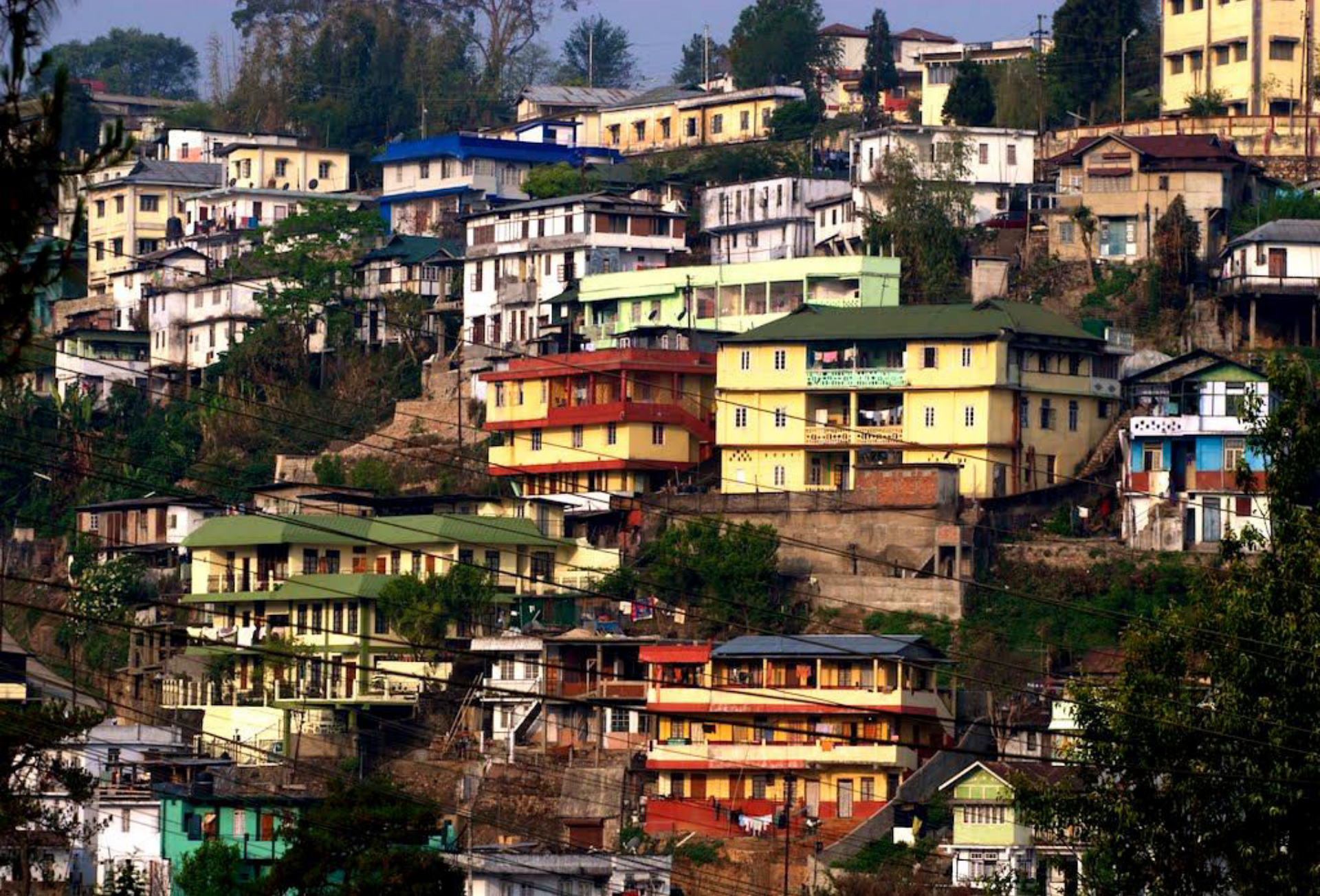


# House Type



Shillong Before 1897





**Shillong - 2018**





**Shillong bridge toward Dowki- before 1897**





**Shillong bridge toward Dawki- after 1897**





**Shillong bridge toward Dawki- Present**





**Shillong Bazaar Before 1897**





**Shillong Bazaar After 1897**





**Shillong Bazaar- 2018**

- The following pictures have been taken from the book “From Residency To Raj Bhavan” by Imdad Hussain, 2005



**Raj Bhavan before the 1897 Earthquake**





**Stone Masonry Structure**

**Raj Bhavan After 1897 earthquake**





**Raj Bhavan 2018**





**Ward Lake Before 1897**





**Ward Lake After 1897**





**Ward Lake-2018**





**All Siant Church, Shillong, before 1897**



**All Siant Church, Shillong, after 1897**





**All Saint Church, Shillong, 2018**

**“earthquakes don't kill people  
but faulty constructed  
buildings do,**

**the task of reducing  
vulnerability of structures and  
buildings will be the key to  
earthquake risk reduction”**

# Thanks

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