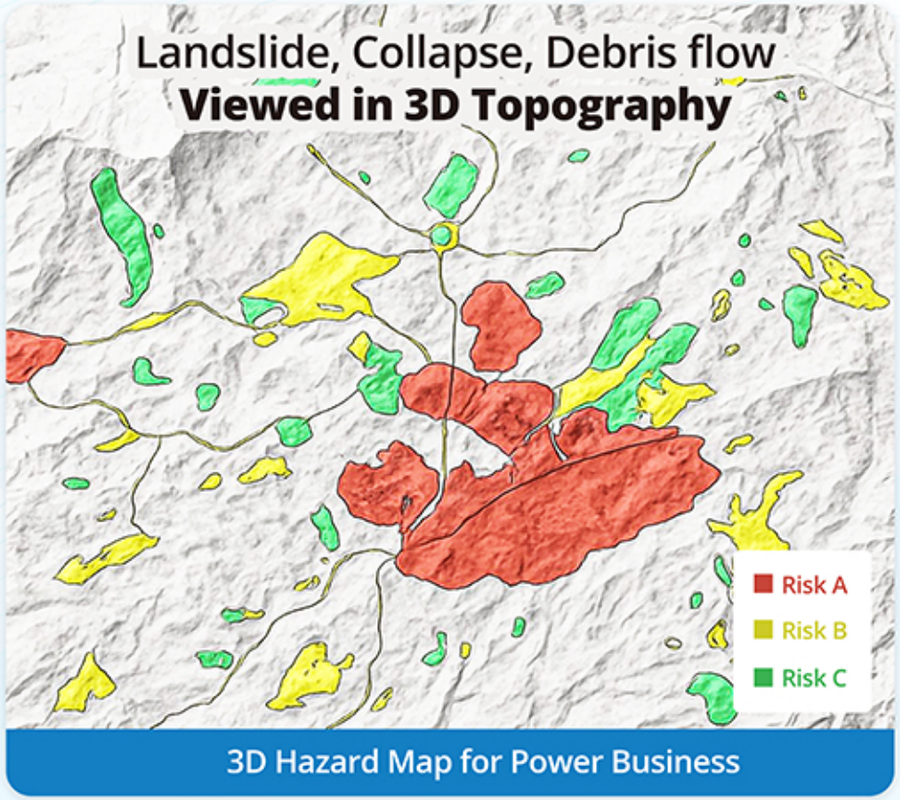
NIPPON KOEI

1. Hazard Maps for Power Producers

ID&E
A member of Tokio Marine Group

~ Recommendations for a Safer Development Plan ~

Would you like to choose a safe site by hazard maps?



3D Hazard Map for Power Business

Collapsed Access Road

Power Facilities and Landslide

Landslide Toward Powerhouse

How about visualizing risks with hazard maps and stable business operations with safe facilities?

Proposals for appropriate land use and development plans considering the local characteristics & topography

Investment Plan Avoiding Disaster Risks	In selecting an investment property, you can choose a property or land with low risks of disasters.
Optimization of Investment Plans	In investment planning, calculating cash flow that considers disaster risk is possible (cost for disaster measures and insurance, etc.).
Stable Business Operations	In constructing facilities, creating safe structures resistant to disaster risks is possible. Facilities that take disaster risk into account will promote stability in business operations.

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How about visualizing risks with hazard maps and stable business operations with safe facilities?

FS/MP	Construction	Operation
• Site Selection • Facility Plan • **Hazard Map** • Field Investigation	• Advanced Disaster Prevention Facilities • Detailed Design • Facility Construction	• Countermeasure for Disaster Occurrence • Monitoring

Risk Management in Power Generation Business for Power Business

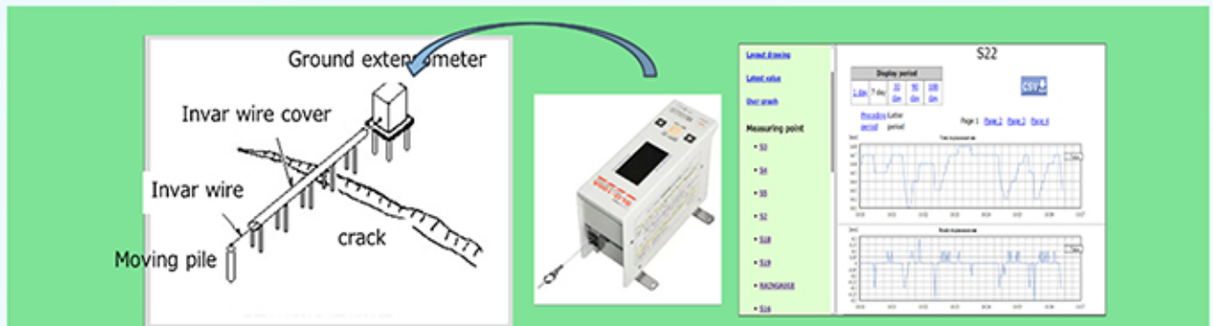
We are committed to safe power generation facilities.

1.Measurement work
Improvement of facilities safety through advanced disaster prevention for dangerous areas

Automatic Observation Instrument System

2. Maintenance
To understand changes in slopes through daily inspections.

3. Monitoring
Automatic observation using observation instruments. Grasping the signs of disaster occurrence



Schematic diagram of ground extensometer　Ground extensometer sensor　PC Monitoring Graph

Automatic Observation Instrument System

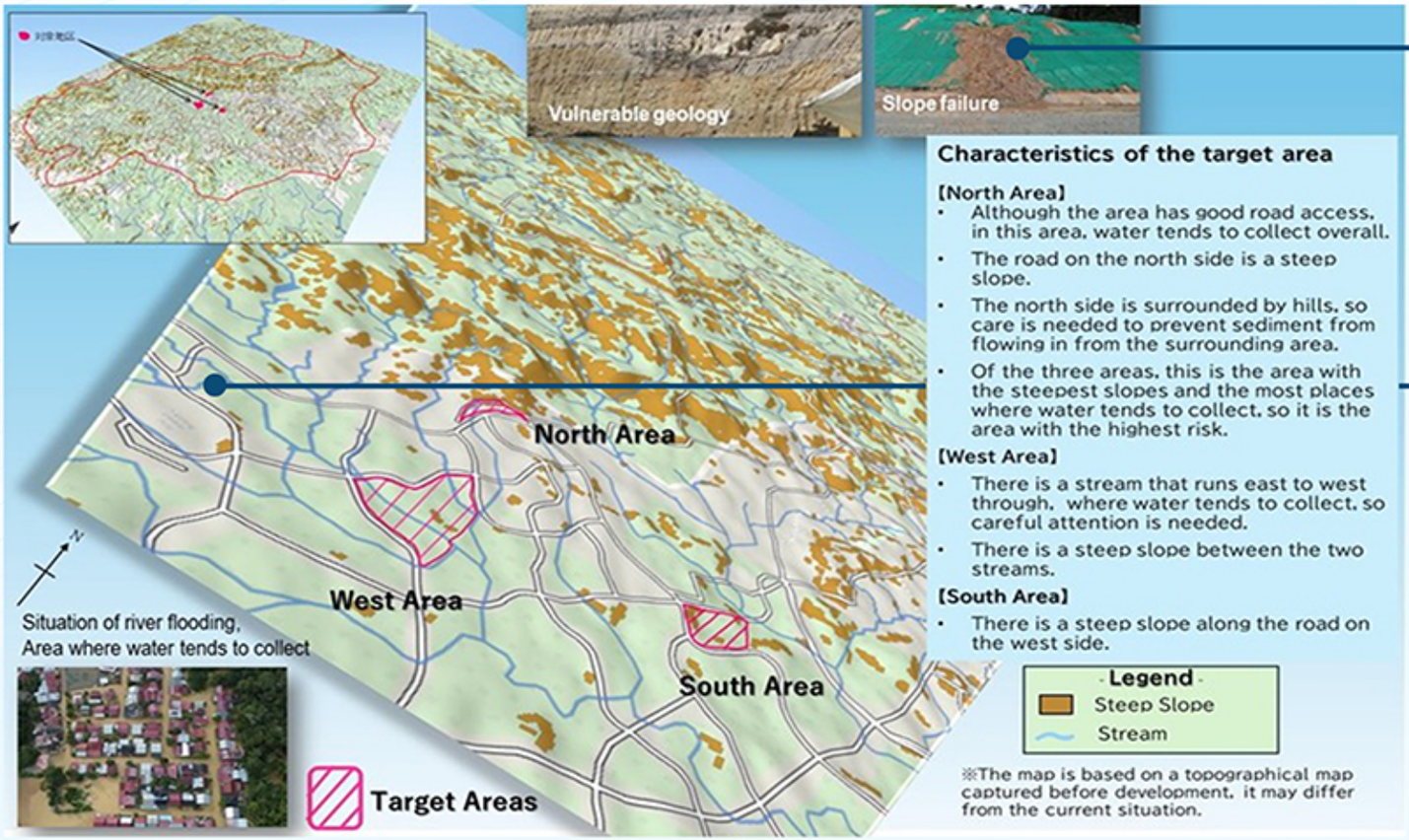
Possible hazards for assessment

Climate Change	snow accumulation, avalanches, high waves/storm surges, sea level rise, coastal erosion
Heavy Rain	flooding of rivers, flooding of inland water, landslides, mudslides, landslides, embankment collapse
Earth quake	liquefaction, damage to facilities, collapse of buildings and houses, tsunami
Volcanic Eruption	volcanic mudflows, volcanic ash

2. Hazard Maps for NUSANTARA

~ Recommendations for a Safer Development Plan ~

Would you like to choose a safe plot by multi-hazard maps?



Convenient for Comparing Potential Sites

Steep slopes, floods, and other disasters viewed in 3D from above

3D Topographical Map, Multi-hazard Map

What about investing in land with higher asset value by visualizing risks using multi-hazard maps?

Proposals for appropriate land use and development plans considering the local characteristics & topography

Investment Plan Avoiding Disaster Risks	In selecting an investment property, you can choose a property or land with low risks of disasters.
Optimization of Investment Plans	In investment planning, calculating cash flow that considers disaster risk is possible (cost for disaster measures and insurance, etc.).
Improving the Value of Investment Properties	In constructing facilities, creating safe structures resistant to disaster risks is possible. Facilities that take disaster risks into account add value for customers.

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Multi-hazard maps enable to create highly secure and resilient development plans considering climate change.

Sunken garden planned in a low-lying area

Characterizing the land to realize the optimal land utilization and investment

landscape-enhanced detention pond

Creating a safe, secure and high-quality lush greenery environment

Terraced housing development avoiding the risk of slope failure

Consulting services for safe land selection and land-use planning based on risk assessment, and infrastructure development

Site Selection

Hazard Risk Survey
- Desk Research
- On-site Inspection
- Risk Assessment for each Property

Land Potential Survey
- Desk/Field Survey
- ▪Transportation access, infrastructure
- ▪Trends in surrounding development
- ▪Legal regulations, urban planning
- Suggestions regarding the development direction with the highest potential

Land Acquisition

Understanding basic land information
- Drone surveying (3D)
- Geological survey
- Understanding planning conditions (risks)

Safe and efficient land use zoning
- Zoning that draws out the full potential of the land while avoiding hazard risks
- Infrastructure planning that supports efficient urban activities

Basic Plan

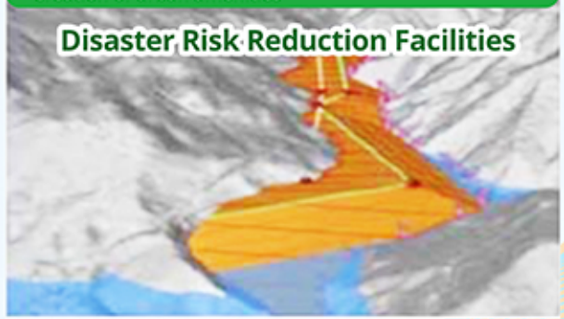
Master Plan
- Land-use plan
- Infrastructure development plan
- Review of disaster management facilities

Basic Design

Design of disaster management facilities
- Design of disaster management facilities

Infrastructure Development Design
- Land development, roads, lots & blocks, drainage facilities, etc.

Building layout and design
- Architecture, landscape planning and design considering the scenery
- Creation of urban amenities



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