4TH INTERNATIONAL CONFERENCE
on Earthquake Engineering and Post Disaster Reconstruction Planning
(ICEE-PDRP 2026)
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Organized by
KHWOPA ENGINEERING COLLEGE (PU)
KHWOPA COLLEGE OF ENGINEERING (TU)
(An Undertaking of Bhaktapur Municipality)
Newsletter

4th International Conference on Earthquake Engineering and Post Disaster Reconstruction Planning (ICEE-PDRP 2026) Concluded

The 4th International Conference on Earthquake Engineering and Post-Disaster Reconstruction Planning concluded successfully at Khwopa Engineering College and Khwopa College of Engineering. The two-day conference brought together national and international researchers, engineers, architects, and policymakers to discuss seismic safety and resilient reconstruction.

The concluding session was chaired by Mr. Sunil Prajapati, Mayor of Bhaktapur Municipality. Ms. Srijana Sainju, Member of the Bagmati Provincial Assembly, and Ar. Rajani Joshi, Deputy Mayor, attended as guests. Key discussions focused on heritage-sensitive retrofitting, advanced simulation and AI applications, and inclusive reconstruction approaches. The organizers emphasized the need to translate research into practical action to build safer and more disaster-resilient communities.

Mayor Prajapati expressed his hearty congratulations and sincere thanks to keynote speakers, guest speakers, professors and participants for their contribution to the successful completion of the international conference jointly organized by the two colleges. He shared that Bhaktapur Municipality has been conserving both tangible and intangible heritage and developing Bhaktapur as a major tourist destination. He remarked that Bhaktapur is the only municipality in Nepal that provides education from early childhood care to higher education. More than 7,000 students are currently pursuing higher education in various disciplines in the municipal institutions. He opined that universities should be research oriented. Accordingly, the colleges run by the municipality have been organizing national conferences annually and international conferences every two years. He also informed the audience about preparations ongoing to establish Khwopa University by integrating all our colleges. He concluded his speech expecting similar participation from all in the future and bidding them a farewell.

In the closing ceremony, Ms. Srijana Sainju, Member of Provincial Parliament, Bagmati Province, highlighted the relevance and significance of the topics and issues discussed in the conference and appreciated the contribution of presenters and participants. She recalled the devastating earthquake of 2015 and the heavy losses and the difficulties it caused. She mentioned that Bhaktapur Municipality and engineering colleges of Khwopa Circle are jointly endeavoring and collaborating with people and experts seriously.

Likewise, Er. Sunil Duwal, Principal of Khwopa College of Engineering, highlighted the successful integration of high-tech engineering with social reality and heritage preservation. Addressing the gathering of experts from Nepal, Japan, China, New Zealand, and India, he reflected on the two-day event which featured over 40 technical papers covering advanced topics. He emphasized that true resilience stems from both technical formulas and strong community bonds, concluding with a vote of thanks to visionary leader Mr. Narayan Man Bijukchhe (Rohit) and the Bhaktapur Municipality for their foundational support in making the college a vital hub for disaster-related knowledge exchange.

He also thanked all the distinguished keynote and guest speakers and described the presented research as "blueprints for saving lives" essential for building a safer Nepal as the academic community looks forward to the 5th ICEE-PDRP.

Talking on behalf of the participants, Prof. Dr. Rajesh Dhakal opined that earthquake resilience is multidisciplinary and goes far beyond structural well being. He pointed out that it requires participation of not just engineers but also of people from archealogy, history, and law. He expressed his happiness that the conference has raised the platform for people around the globe to unite towards a common goal of improving structures and it provided an opportunity to replenish, regather, and regroup for reconstruction and restoring structures.

Delivering the vote of thanks, Dr. Manjip Shakya, secretary of conference, highlighted the event's success in presenting six keynote speeches, eight guest lectures and 53 innovative research presentations. Emphasizing the need for global coordination and the integration of traditional knowledge with modern science, his speech called for a transition from discussion to policy and practice.

Panel Discussion on Strategy for Post Disaster Reconstruction of Heritage Structure

The panel discussion on strategy for post disaster reconstruction of heritage structures was conducted as the last session of the conference. The panelists were Director General of Department of Archealogy Shaubhagya Pradhananga, Deputy Mayor of Bhaktapur Municipality Ar. Rajani Joshi and Senior culturalist Prof. Dr. Madan Rimal. Expressing her views, Ar. Joshi talked about the strategists adopted by Bhaktapur Municipality on reconstruction efforts. She described Bhaktapur as living museum with tangible and intangible cultural heritages. She pointed out that the two engineering colleges were involved in documentation of earthquakes and Bhaktapur municipality worked with aim to restore, reconstruction and rebuild after the disaster.

Ms. Pradhananga put forward her views focusing on the work of Department of Archeology. She remembered the work of the department during the reconstruction post Gorkha earthquake. She foucssed on the works done in debris management, salvation and documention of historical monuments remembering the pressure the department was under during the time-constraining efforts right after the earthquake. She also pointed about that community and heritage were two sides of the same coin and heritage and community are interrelated.

Answering the questions on how heritages were preserved from the cultural perspective, Dr. Rimal reinterated that every person with sentimental attachement with the monuments is responsible for preserving the fallen heritage after a disaster.

The panel discussion focused on the cultural heritage and better ways of involving community towards reconstruction post-disaster. The discussion opened different avenues of the reconstruction. The panel discussion was moderated by Ar. Pramila Silpakar from the college's technical section.

Keynote Speech

Out-of-plane Instability of Ductile RC Structural Walls : State-of-the-Art

- *Prof. Dr. Rajesh Dhakal*

Keynote Speaker, Professor Rajesh Dhakal of the University of Canterbury, called for urgent structural and policy reforms in post-disaster planning. Addressing the "conflicting opinions" from unqualified experts that fueled public fear after recent earthquakes, Dhakal emphasized the need for a dedicated government reconstruction authority and strict professional registration for engineers. He strongly advocated for establishing a National Earthquake Engineering Centre of Excellence to test local materials and technologies.

On the technical front, Prof. Dhakal presented state-of-the-art research on the out-of-plane instability of reinforced concrete walls. His findings challenged current design codes, revealing that wall stability is governed not just by thickness, but by tensile strain limits and axial load. He introduced advanced numerical modeling using curved shell elements to better predict these catastrophic failures.

Keynote Speech

Introduction to the Japanese Seismic Assessment and Retrofit

- *Prof. Dr. Susumu Kono*

The keynote presentation traced Japan's evolving seismic design philosophy, shaped by lessons from major earthquakes, such as the 1995 Kobe, 2011 Tohoku, 2016 Kumamoto, and 2024 Noto earthquakes.

Prof. Kono explained Japan's two-level seismic design system, emphasizing allowable stress design for moderate earthquakes and capacity-based checks for severe events. The talk highlighted the Is seismic index, developed by the Japan Building Disaster Prevention Association (JBDPA), as a key tool for evaluating and retrofitting existing reinforced concrete buildings. Various retrofit strategies—including strength enhancement, ductility improvement, damping systems, and base isolation—were discussed with real-world case studies.

Special attention was given to the growing challenge of foundation and pile damage, which has led to the demolition of otherwise structurally sound buildings. The presentation stressed the need to improve foundation resilience and integrate superstructure–foundation interaction into future design codes. The session offered valuable insights for earthquake-prone regions seeking safer and more resilient built environments.

Guest Speech

Effects of Partial Infill in RC Frames Under Lateral Loading

- *Prof. Dr. Prachand Man Pradhan*

Prof. Pradhan delivered a focused and technically grounded talk on the effects of partial masonry infill in reinforced concrete frames under lateral loading, drawing directly from analytical, experimental, and code-based research. He highlighted how partial infills which are commonly ignored in practice through bare-frame analysis, significantly alter real structural behavior, often leading to captive column effects and increased shear demand during seismic loading. Through equivalent strut modeling, comparison of full and partial infills, and validation via scaled laboratory experiments, he demonstrated that stiffness increases and vibration periods reduce markedly when infill height exceeds about 40% of the opening, but at the cost of higher column shear and vulnerability at wall–column junctions. The presentation clearly emphasized that while partial infills enhance stiffness, they are structurally unfavorable for lateral loads unless explicitly modeled and detailed, concluding with practical recommendations to improve column shear capacity and adopt more realistic infill-aware analytical approaches.

Guest Speech

Cultural Heritage Damage and Post-Disaster Recovery Under Compound Hazards - The Noto Peninsula Earthquake of Jan.1,2024 Followed by Extreme Rainfall

- *Prof. Dr. Toshikazu Hanazato*

Prof. Hanazato delivered a thoughtful and engaging lecture highlighting how earthquakes and extreme weather events threaten cultural heritage, drawing lessons from the 2024 Noto Peninsula Earthquake in Japan. He shared how the powerful earthquake, followed by heavy rainfall, led to widespread damage in historic settlements and heritage structures, revealing how vulnerable culturally significant sites are to such compound disasters.

The talk drew on the behavior of traditional wooden buildings during the earthquake, explaining that heritage structures often respond very differently from modern constructions. Importantly, he cautioned that poorly planned modern interventions can sometimes worsen damage, while traditional building techniques—refined over generations - often demonstrate notable strength and resilience.

In closing, Prof. Hanazato pointed out the importance of integrated disaster management that values traditional knowledge, involves local communities, and promotes sustainable restoration practices. His lecture offered meaningful insights for safeguarding cultural heritage in disaster-prone regions and reminded us of the need to balance engineering solutions with respect for traditions and historical values.

Guest Speech

Earthquake Vulnerability and Resilience at Heritage Spaces

- *Prof. Dr. Tej Kumar Karki*

Prof. Karki presented on the vulnerability and resilience of heritage spaces in Kathmandu Valley, drawing lessons from the 2015 Gorkha Earthquake. He highlighted that despite their cultural and historical importance, heritage sites remain highly vulnerable due to weak regulatory governance, poor enforcement of building codes, and inadequate disaster preparedness. Using examples such as the collapse of Kasthamandap, he emphasized that disasters result not only from earthquakes but also from institutional failures, delayed rescue efforts, and neglect of public safety.

He further discussed contrasting impacts of earthquakes in different countries, stressing that corruption, policy gaps, and ineffective governance significantly increase loss of life and damage. At the same time, he highlighted the strength of community resilience, particularly in Bhaktapur, where local participation, traditional institutions such as Guthis, and collective ownership played a vital role in post-earthquake recovery and heritage restoration.

Dr. Karki concluded by stressing that true earthquake resilience goes beyond rebuilding structures. It involves strengthening governance systems, reducing vulnerability, rebuilding lives, and empowering communities to actively participate in preparedness and risk reduction. His lecture served as a strong call to action for policymakers, institutions, and communities to work collaboratively toward safer and more resilient heritage spaces in the Kathmandu Valley.

Guest Speech

AI Based Damage Location Detection of Bridge Girder

- *Prof. Dr. Tushar K Datta*

Prof. Datta highlighted the growing trend of using in identifying structural damage in bridge girders. He explained how finite element analysis was used to simulate damaged conditions and generate training data for ANN models. The study demonstrated that both single and multiple crack locations, along with damage severity, could be accurately predicted using changes in natural frequencies and mode shapes. Notably, the results showed that reliable damage detection is possible even with limited sensor measurements, making the approach cost-effective and practical for real-time monitoring. The research marks a significant advancement in structural health monitoring and offers strong potential for safer and smarter bridge infrastructure management.

Out-of-Plane Dynamic Shock Table Testing of a Mock-Up Unreinforced Stone Masonry Building

- Dr. Kshitij Charan Shrestha

The presentation reported full-scale experimental findings on the seismic vulnerability of traditional unreinforced stone masonry buildings common in rural Nepal. The presenter explained that using a 3.6 m × 6.0 m dynamic shock table, they investigated out-of-plane wall behavior under progressively increasing horizontal shock loads, documenting damage evolution from initial cracking to complete collapse. Results showed a clear non-linear dynamic response, with decreasing natural frequency and increasing damping as damage accumulated, culminating in asymmetric wall buckling and roof collapse under extreme loading. The experiment is a rare full-scale evidence of collapse mechanisms in mud-mortar stone masonry structures and highlights the critical role of roof–wall interaction, construction detailing, and confinement in seismic performance. The findings contribute valuable experimental benchmarks for improving analytical models and developing effective seismic strengthening strategies for vulnerable masonry buildings.

Guest Speech

From Seismic Risk to Resilient Recovery: Integrating Disaster Management and Post-Earthquake Reconstruction in the Himalayan Region

- *Dr. Deepak Bikram Thapa Chhetri*

The conference featured an insightful presentation by Dr. Deepak Bikram Thapa Chhetri, PhD (Eng.), Director of Engineering, Kantipur City College, as a Guest Speaker. His talk, "From Seismic Risk to Resilient Recovery: Integrating Disaster Management and Post-Earthquake Reconstruction in the Himalayan Region," examined Nepal's post-earthquake recovery experience with a critical and integrative perspective. He emphasized that disaster losses are not solely the result of natural hazards, but are amplified by weak governance, poor coordination across government tiers, limited local capacity, and social exclusion. He highlighted key gaps in reconstruction, including the neglect of social fabric, equity, livelihood restoration, and multi-hazard risks. The presentation underscored the need for integrated recovery frameworks that align disaster response, reconstruction, and long-term development. The session concluded with a strong message on resilient recovery, summarized in the key takeaway: "Feel the Gap to Fill the Gap."

Restoring Faith and form: Reconstruction of Bunga-Dyo (Rato Matsyendranatha) Temple at Bungamati

- Binita Magaiya

The presentation highlighted the decade-long reconstruction of the Rato Matsyendranatha Temple in Bungamati, severely damaged during the 2015 Gorkha earthquake. The presenter showed that their study emphasized the pivotal role of local community participation, which transformed the project from a contracted construction to a community-led effort. By integrating socio-cultural practices, faith, and traditional knowledge with technical expertise, the reconstruction preserved the temple's authenticity while navigating challenges posed by multiple stakeholders, including national and international agencies. Their findings underscored that engaging the immediate community is essential in heritage restoration, ensuring ownership, continuity of cultural practices, and resilience, offering valuable insights for future heritage conservation in Nepal.

Reconstruction Case Studies in Japan and Nepal–Perspectives from Endogenous Development and The 'Icicle Model'

- Anju Yonekawa

The presenter showed a comparative study of post-disaster reconstruction practices in Japan and Nepal through the lens of endogenous development theory and the Icicle Model. The presentation examined how traditional systems and modern infrastructure can coexist through layered development rather than complete replacement. Using Otsuchi Town in Japan as example, the study highlighted efforts to preserve culturally significant wells and spring water systems after the 2011 tsunami. The Kathmandu Valley case focused on Dhungedhara and Pokhari as living heritage under pressure from urbanization. The analysis emphasized community participation in reconstruction decisions. The Icicle Model was used to explain continuity between past and present practices. The study underscored the importance of community participation, cultural continuity, and locally rooted practices for resilient reconstruction.

Investigation of language difficulties in earthquake communication and outreach through analysis of Nepali print and visual media texts

- Naba Raj Budhathoki

The presenter executed comparative analysis of problematic language features in the current earthquake communication practice across Nepali print and visual media platforms. By examining lexical and syntactic elements of language such as technical jargon, complex sentences and inefficient metaphor usage, the study identified how these features impact message clarity, audience comprehension, and overall communication efficacy. Its findings revealed distinct challenges, including print media's reliance on complex terminology that may hinder comprehension, contrasted with visual media's potential for emotional dramatization that can affect message objectivity. The study underscores the importance of tailoring audience-friendly language use in print and visual coverage of earthquake information for risks and safety to enhance disaster communication effectiveness. The presentation recommended expert communicators, media practitioners and policymakers to improve earthquake-related information dissemination in Nepali for more effective public disaster preparedness and response in the country.

Field investigation for determining the dynamic characteristics of historical structure

- Amit Prajapati

The presenter talked about a seismic assessment study of the historic Bhairabnath Temple in Bhaktapur, Nepal, highlighting the value of non-destructive vibration testing for heritage structures. Using ambient vibration tests, the team evaluated the temple's dynamic behavior in both damaged and post-reconstruction states. Results showed lower natural frequencies in the damaged condition, indicating reduced stiffness and increased flexibility. After reconstruction, advanced operational modal analysis techniques confirmed improved structural performance, with strong agreement between analytical methods. The study emphasizes how vibration-based testing can reliably capture structural changes and supports the need for continuous health monitoring of centuries-old monuments in seismic regions.

Economic Impact of Restoration of Historic Pond in Bhaktapur: A Case Study of Bhaju Pukhu

- Eurika Rajbanshi

Transforming a neglected 12th-century relic into a modern engine for urban growth, the presenter addressed the socio-economic revival triggered by the restoration of Bhaju Pukhu. In her presentation, Ms. Rajbanshi demonstrated how the municipality-led reclamation of the pond has successfully turned an abandoned space into a high-value commercial node. According to the study, the revitalization has directly boosted local livelihoods, resulting in a surge of youth-oriented cafes, increased property rental rates, and the creation of new employment opportunities. The presenter specifically noted the success of interactive community activities, such as organized fish harvesting, which generated significant municipal revenue and fostered local engagement. By mapping visitor behavior, the research reveals that the pond now functions as a vital "social commons," particularly for evening foot traffic. The presentation concludes that with the addition of regulated vending and boating services, Bhaju Pukhu can serve as a replicable model for heritage-led sustainable development in historic cities.

Seismic Qualification: An Approach for Safe Power System During Earthquakes

- *Yamini Gupta*

The presentation focused on the seismic vulnerability of electrical and telecommunication systems, emphasizing lessons from past earthquakes. The speaker highlighted that high-voltage substation equipment is particularly susceptible to damage under seismic loading, posing serious risks to power continuity and public safety. With electricity demand rising sharply after major earthquakes, the presentation stressed the importance of ensuring reliable power supply during and after such events. It introduced the fundamentals of seismic qualification for electrical equipment, outlining qualification procedures and relevant code provisions. The presentation concluded that mandatory seismic qualification before installation is essential for developing earthquake-resilient electrical infrastructure.

Course Correcting Power of Surveillance and Social Activism in the Heritage Restoration Process: A Case Study of Rani Pokhari, Kathmandu Metropolitan City

- *Ram Shrestha*

The presentation highlighted how citizen emotions and collective action shape post-disaster heritage restoration, using the Ranipokhari reconstruction in Kathmandu as a case study. The research showed that disasters often motivate communities to actively protect both lives and cultural assets. Through content analysis, the study demonstrated how community surveillance and social activism played a decisive role in holding restoration agencies accountable. Public scrutiny exposed technical mistakes and negligence during the post-earthquake restoration process, forcing authorities to correct their approach and address past errors in temple reconstruction. The findings underline the growing power of engaged citizens in safeguarding heritage values during recovery efforts.

Application of m-factor in seismic assessment of an existing MRT building as per NBC 105:20220 and ASCE 41-17

- *Menaka Phagu*

The presenter showed a technical study examining how the component modification factor (m-factor) influences elastic demand–capacity behavior in existing reinforced concrete buildings. The research compared seismic assessment results from Nepal Building Code (NBC) 105:2020 and ASCE 41-17 using an MRT-designed building. By evaluating demand–capacity ratios of beams and columns under shear and flexure, the study found NBC 105:2020 to be more conservative, producing higher beam demands. ASCE 41-17 better captured inelastic behavior through explicit ductility considerations, revealing early column yielding and potential weak-column mechanisms. The study recommended ASCE 41-17 for performance-based evaluation and retrofit planning.

The Role of Iconography in Restoring Laxmi-Narasimha Temple

- *Pramila Silpakar*

The presentation highlighted the restoration of the 14th-century Laxmi-Narasingh Temple in Bhaktapur, a site of immense historical and cultural value. Severely damaged in the 1934 earthquake and partially reconstructed in 1986, the temple underwent further restoration by Bhaktapur Municipality in collaboration with local users, heritage experts, and engineering colleges. The study emphasized the critical role of traditional iconography in preserving cultural identity, particularly for windows, struts, door portals, and tympana. Drawing on historical records, artifacts, and expert input, the project navigated incomplete documentation to faithfully reconstruct the temple, offering a model for heritage restoration where historical details are scarce or fragmented.

Seismic Performance Assessment of Vertical Floor-Extended RC Buildings with URM Infilled Frame in Kathmandu Valley

- *Aman Man Singh*

The presenter explored the seismic performance of reinforced concrete (RC) buildings in Kathmandu Valley, many of which have been vertically extended without proper engineering oversight. The study focused on the role of unreinforced masonry (URM) infill walls, commonly used as partitions and often ignored in conventional design, which significantly affect structural stiffness and flexibility. Using non-linear numerical modeling and pushover analysis in SAP2000, the research compared infill-integrated and bare-frame models to evaluate real-world performance. Findings show that incorporating infill effects yields more accurate assessments of building stability and load-carrying capacity, providing critical insights for safer design and retrofitting practices.

Study on Damping Property and Vibration Behaviour Of SDOF System

- *Manoj Acharya*

The presentation focused on determining the damping ratio of a single-degree-of-freedom (SDOF) system, a key parameter in vibration analysis for structures like buildings and machinery. The research involved fabricating physical SDOF systems using mild steel sections and a lumped mass to simulate dynamic loading. Free vibration tests were conducted, with displacement-time data captured by sensors. This experimental setup, supported by numerical simulations, provided a valuable tool for studying SDOF systems and enhancing the accuracy of dynamic response predictions.

Determination of Fundamental Time Period of Bare Frame Building Incorporating Number of Bays and Storey

- *Angel Loksam*

The presenter showed results of study investigating the fundamental time period of reinforced concrete bare-frame buildings, considering both building height and number of bays. Emphasizing its importance in seismic design, the research addressed limitations in codes that rely mainly on height-based estimates. A parametric study was conducted using ETABS models, varying storeys and bays. Modal and regression analyses produced an empirical equation with strong accuracy and results showed height as the dominant factor, while bay number had a secondary effect. Incorporating plan configuration improves time-period estimation for preliminary seismic design.

An Assessment of Probability of Soil-Structure Resonance of a Masonry Building: A Case Study of Bhaktapur Municipality

- *Aman Prajapati*

The presentation highlighted a study assessing the probability of soil–structure resonance in unreinforced masonry buildings located in the heritage-rich core of Bhaktapur Municipality. Using microtremor measurements from multiple locations, the study evaluated the fundamental time periods of both soil and structures to understand their dynamic compatibility during seismic events. The findings revealed a significant mismatch between soil and building periods, indicating a low likelihood of first-mode resonance. However, despite this low resonance probability, severe damage was observed during the 2015 Gorkha Earthquake. The presentation highlighted the influence of other contributing factors such as basin amplification, transient ground motion, and multi-modal excitation, emphasizing the limitations of relying solely on conventional resonance indicators for seismic risk assessment.

Innovative Retaining Wall System for Enhanced Safety and Economy

- *Jagadiswar M. Shrestha*

The presentation highlights a new type of retaining wall design been developed to combine the benefits of both gravity and cantilever designs. The wall consists of parallel double walls connected by tie members at regular intervals:- this innovative approach significantly reduces stress compared to traditional designs, offering both improved safety and cost-effectiveness. Unlike counterfort retaining walls, which are complex and labor-intensive, Mr. Shrestha opined that the design is easier to construct and does not require skilled labor. Three-dimensional analysis confirms its superior performance, making it an ideal choice for medium to tall walls. He concluded that the new design presents a faster, more economical solution for retaining structures.

Effect of Unauthorized addition of Storeys in a Residential Building

- *Meer Raj Ghimire*

A presentation has assessed the effects of unauthorized storey additions in Nepal's buildings using finite element (FE) modeling and response spectrum analysis. The research considered scenarios with vertical and horizontal extensions added without proper design or legal authorization, simulating structural failure. It found that adding the first storey increased base shear and storey drift due to the added seismic mass, but these effects diminished with more storeys. The study revealed that the ground and first floors were most vulnerable to failure, especially when horizontal projections accompanied vertical extensions. These findings underline the importance of proper design in preventing earthquake-related damage.

Seismic Load Resisting Behavior of Nepalese Rest House

- *Mukesh Maharjan*

The presenter discussed traditional Nepalese rest houses, known as patis or sattals, which are communal structures built using a combination of timber frames and masonry walls, influencing their seismic behavior. The study examined how these buildings resist gravity and earthquake loads, with particular emphasis on traditional timber joints that depend on interlocking geometry rather than nails or adhesives. A representative structural model was developed based on field documentation, and numerical analyses were carried out to simulate seismic loading conditions. The findings illustrate the interaction between timber and masonry components, highlighting both the strengths and vulnerabilities of this traditional construction system.

Local Building Cultures in Reconstruction

- *Pawan K. Shrestha*

The presentation insights a ASF Nepal reviewed a decade of post-2015 earthquake reconstruction, noting that while the National Reconstruction Authority reported 93% completion of private houses, many "grant houses" ignored local culture, livelihoods, and climate adaptation. Uniform building codes produced standardized concrete homes, often modified informally by households due to design limitations. The 2023 Jajarkot earthquake exposed ongoing structural flaws and low code compliance. ASF Nepal emphasized that integrating local knowledge, skills, and socio-technical approaches leads to safer, culturally appropriate, and sustainable housing, warning that reliance on untrained masons and industrial materials increases community vulnerability.

Reconstruction of Thanthu Durbar, Bhaktapur: A Case Study

- *Sarita Dhukhwa*

The presentation highlighted the reconstruction process of Thanthu Durbar, a historically and culturally significant heritage structure located at Bhaktapur Durbar Square. It emphasized the importance of understanding the site's historical background, architectural evolution, and past reconstruction efforts before initiating post-earthquake restoration. The presentation further highlighted detailed site study, excavation, and documentation carried out after the 2015 Gorkha Earthquake to identify the original footprint and construction system. It showcased the revival of traditional Malla-era architecture using indigenous materials and techniques, combined with structural measures to improve earthquake resilience. Community participation, involvement of local artisans, and a user-committee-based approach were also highlighted as key strengths of the project, ensuring authenticity, transparency, and long-term heritage preservation.

Advancing Seismic Wave Simulation: The Application of the Spectral Element Method in Different Geological Settings

- *Pukar Regmi*

The presentation highlighted advances in seismic wave simulation, emphasizing the Spectral Element Method (SEM) as a transformative tool in computational seismology. Traditional methods, such as Finite Difference and Finite Element methods, struggle with complex geological structures and high accuracy requirements. SEM combines FEM's geometric flexibility with spectral techniques' exponential precision, enabling realistic modelling of diverse terrains—from Kathmandu's intricate sedimentary basins to continental-scale models of the Indian Peninsula. The review detailed SEM's methodological strengths, its applications across scales, and prospects in the exascale computing era. Researchers underscored SEM's potential to improve earthquake hazard assessments and enhance understanding of seismic wave propagation in complex geologies.