

Nara protocol implementation in post-2009 earthquake heritage recovery in Padang, Indonesia

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ARTICLE INFO	ABSTRACT
<p><i>Article history:</i> Received June 06, 2025 Received in revised form Oct. 07, 2025 Accepted December 21, 2025 Available online March 01, 2026</p> <p><i>Keywords:</i> Authenticity Heritage assets Nara protocol Participatory Recovery</p> <p>Corresponding author: Khaerunnisa Department of Architecture, Faculty of Engineering, Universitas Atma Jaya Yogyakarta, Indonesia Email: khaerunnisa@uajy.ac.id ORCID: https://orcid.org/0000-0001-7088-1171</p>	<p><i>The 2009 earthquake in Padang, Indonesia, caused significant damage to heritage assets, posing challenges to preserving their authenticity during recovery. This study examines the implementation of the Nara Protocol's six authenticity attributes traditions and techniques, form and design, use and function, materials and substance, spirit and feeling, and location and setting in participatory community-led heritage recovery efforts. The objective is to assess how the recovery process aligns with the Nara Protocol's principles of contextual authenticity while addressing local cultural values. A mixed-method approach was employed, including field surveys of damaged heritage structures, stakeholder interviews, and document analysis of pre- and post-disaster records. The results indicate various implementations of the six authenticity attributes, leading to alterations in authenticity. Religious and community buildings show more changes in materials and techniques due to the availability of present-day materials and the built-back-better principle, aiming to provide safer buildings and environments for future earthquakes. The lack of sufficient documentation challenges restoration efforts post-disaster, resulting in changes in shape and design. Advocacy from experts, universities, ancestors, and donors supports these conservation efforts. This study also highlights that community involvement is crucial to ensure the authenticity of spirit and feeling post-recovery.</i></p>

Introduction

Cultural heritage preservation in post-disaster contexts has gained urgency as climate-related hazards intensify, yet traditional recovery frameworks often prioritize physical reconstruction over sustaining community-owned heritage assets (The World Bank 2017).

Acting as a hub for the gold, textile, pepper, salt, and coffee industries, West Sumatra, especially the capital city, Padang Old Town functioned as the significant trade center since the sixteenth century (World Monuments Fund 2009). The Padang Old Town district shows a vibrant cultural and religious diversity tapestry,

home to a harmonious coexistence of Islamic, Chinese, and Christian communities. The Islamic community, primarily composed of the Minangkabau and Indian ethnic group, plays a central role in the cultural landscape, with mosques such as the Mohammadan and Gantiang Mosque serving as significant religious and social hubs (Refni Yulia, Meri Erawati, and Nopriyasan 2016). In contrast, the Chinese community is represented by historical sites like the See Hin Kiong Temple, Hok Tek Tong, and Heng Beng Tong Association, which reflect rich traditions and practices that date back centuries (Irwan et al. 2024). Additionally, the Christian community contributes to this multicultural

milieu, enriching the social fabric of Padang, which is represented by the existence of great churches, St. Leo Chapel, and Sukma Indah nunnery.

The 2009 earthquake in Padang caused widespread damage to the city's religious and community cultural buildings, profoundly impacting its heritage. The Mohammadan Mosque and Gantiang Mosque, significant Islamic sites, suffered structural damage, including collapsed walls and ceilings, disrupting their roles as community centers (Gianisa and Le De 2018). Identified as neo-Gothic building, St. Leo Church is a distinguished example of Sumatra's Gothic revival, that was constructed in 1903. This building suffered severe structural damage due to the earthquake. Both were strengthened and restored through the collaboration (World Monuments Fund 2009), limiting their ability to serve as places of worship and refuge during recovery efforts. Built in the late 19th C, the Chinese community's heritage assets, including the See Hin Kiong Temple and Heng Beng Tong (HBT) and Hok Tek Tong (HTT) association buildings, were also heavily affected by the earthquake (Erniwati 2018). These structures faced extensive damage to their roofs and walls, threatening their historical significance and cultural functions. Despite these challenges, religious communities functioned a pivotal role in disaster recovery and acts. Their role in fostering resilience and unity among affected populations while highlighting the importance of integrating heritage preservation into recovery frameworks. It exposes vulnerabilities in Indonesia's disaster management systems and the need for participatory approaches that empower local stakeholders in heritage conservation (Teguh 2011).

While global initiatives like UNESCO's 2016 regional workshop in Mauritania emphasized co-management models for World Heritage Sites (WHC UNESCO 2016), and recent studies propose reciprocity-based frameworks linking heritage management to social well-being (Gallou and Fouseki 2022), few address how community-driven recovery can balance cultural preservation with disaster resilience in non-World Heritage contexts. However, the community-led recovery process posed significant challenges in balancing urgent reconstruction needs with preserving authenticity a core principle in heritage conservation. This paper explores the application of the Nara Protocol's six authenticity attributes in

participatory community-led heritage recovery efforts following this disaster.

Adopted in 1994 during the Nara Conference in Japan, the Nara Document on Authenticity (World Heritage Center 1994) marked a watershed moment in heritage conservation by redefining authenticity as a dynamic and culturally contextual concept. As the Venice Charter, moving beyond the material-centric approach of earlier charters, the Nara Protocol emphasized respecting cultural diversity and integrating intangible values into conservation practices (Stovel 2019). It introduced six key attributes traditions and techniques, form and design, use and function, materials and substance, spirit and feeling, and location and setting as the assessing authenticity criteria. These attributes provide a holistic framework for evaluating cultural heritage while acknowledging that authenticity judgments must be relative to specific cultural contexts.

Applying these principles in post-disaster scenarios, such as Padang's recovery after the earthquake, becomes particularly critical. The 2006 Earthquake in Yogyakarta and the 2009 Earthquake in Padang show necessitate rapid reconstruction efforts that can compromise authenticity due to limited resources, technical expertise, and time constraints (Khaerunnisa, SHIBATA, and SAWAKI 2014). Community participation adds another layer of complexity, as local stakeholders may prioritize functional repairs over adherence to conservation standards due to the involvement of multiple stakeholders, lack of conservation frameworks in the disaster recovery process, diverse understanding levels, and preference for conservation and recovery (Khaerunnisa 2013). However, engaging communities is essential for preserving intangible heritage practices and ensuring culturally sensitive recovery processes (Jigyasu 2018). This paper investigates how participatory approaches in Padang aligned with the Nara Protocol's principles and evaluates the level of authenticity achieved during the recovery process.

This research introduces a critical innovation by applying the Nara Protocol's six authenticity attributes form, materials, use, traditions, location, and spirit to evaluate participatory heritage recovery in post-2009 earthquake Padang. While existing studies emphasize technical resilience (UNISDR 2015) or stakeholder engagement (Du and Wang 2025), few integrate both cultural authenticity and

community agency in disaster contexts. Recent frameworks, such as the Hoi A Protocols, prioritize Asian heritage values (UNESCO 2009) but lack actionable metrics for post-disaster scenarios. This study bridges that gap by examining how Padang's community-led reconstruction impacted the authenticity. By contrasting Nara's relativist authenticity with recovery outcomes, it identifies how the community can engage and support sustaining the authenticity of cultural historical building. The objective is to propose a values-based model balancing resilience and cultural continuity, addressing the absence of protocols linking participatory methods to measurable authenticity benchmarks in disaster literature (Lattig 2012). This fills a critical void in heritage risk management, where technical solutions often overshadow socio-cultural priorities (Jigyasu 2018).

Methods

This study employs a mixed-method approach to evaluate the implementation of the Nara Protocol's six authenticity attributes in participatory community heritage recovery efforts following the 2009 earthquake in Padang. The research integrates qualitative and quantitative methods to provide a comprehensive analysis. Field surveys are conducted to assess physical changes in heritage structures, focusing on attributes such as form, materials, and location. Semi-structured interviews with stakeholders, including community members and local authorities, gather insights into intangible practices like traditions and spirit. Document analysis examines pre- and post-disaster records to track changes in use and function. Comparative analysis is applied to evaluate gaps between recovery practices and Nara Protocol principles. By combining these methods, the study identifies challenges in preserving authenticity during reconstruction and proposes actionable recommendations for integrating Nara-based guidelines into participatory frameworks for disaster recovery, ensuring resilience and cultural continuity.

This research is conducted according to the research stages in figure 1, which consist of data collecting, analysis, and conclusion. Data collecting is carried out through interviews and

field observations to obtain information about pre-disaster conditions, stakeholder mapping, recovery frameworks, and recovery results. The analysis stage involves examining the implementation of the six authenticity principles in the Nara Protocol, which can be found in each case study. The aim of this analysis is to identify variations in the application of the Nara Protocol without comparing which implementation is better than the others. In the conclusion stage, factors influencing the application of the six authenticity principles of the Nara Protocol, challenges, and lessons learned will also be identified.

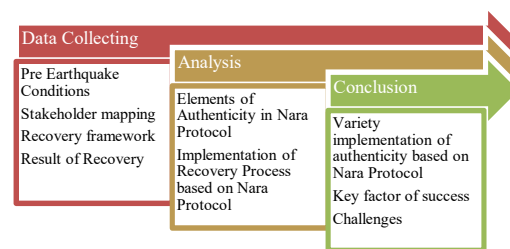


Figure 1. Methodoloty framework

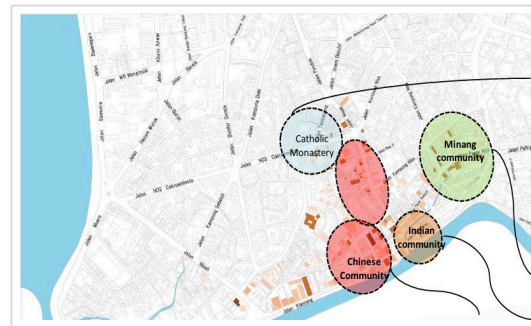


Figure 2. Research locus by community

Results and discussion

The discussion of this research will begin with an explanation of rehabilitation acts by each community, identification of stakeholders and rehabilitation framework, and end with a comparative analysis related to the implementation of the six authenticity principles of the Nara Protocol.

Rehabilitation of Chinese Community Buildings

In this district, the Chinese community is represented by two types of associations: the Chinese associations (HTT and HBT) and the clan associations (Tan, Tjoa, and Kwa Clan). The

buildings of these associations were retrofitted before the earthquake to accommodate the current activities of their members while preserving the facade of the first and second floors. These buildings are located along Kelenteng Street. Extensive rehabilitation work was carried out before the earthquake, including adding reinforced concrete or steel structures and elevators within the buildings. The funding for these rehabilitation efforts was sourced from member donations and monthly membership fees. Following the 2009 earthquake, these rehabilitated buildings experienced minor damage. However, several HTT and HBT funeral houses were demolished caused by earthquake.

Following the earthquake, the HBT, HTT, and Clan Associations restructured their existing committees to maintain the rehabilitation efforts and emergency response of the disaster. They

leveraged their member databases to identify experts for conducting damage assessments and supporting building recovery. For the rehabilitation of the funeral house, expert members performed consultation with HTT and HBT, including architects and civil engineers, in reestablishing the latest funeral house. The funding for this rehabilitation effort was sourced from monthly membership fees and member donations. Each donor's name is inscribed on the foundation as a memorization. The Chinese citizens implemented the method conventionally. These strategic frameworks and expert member contributions functioned a critical responsibility in the recovery process, accommodating the members' needs in new design, not only in terms of philosophically and spiritually on time but also space setting and organization.

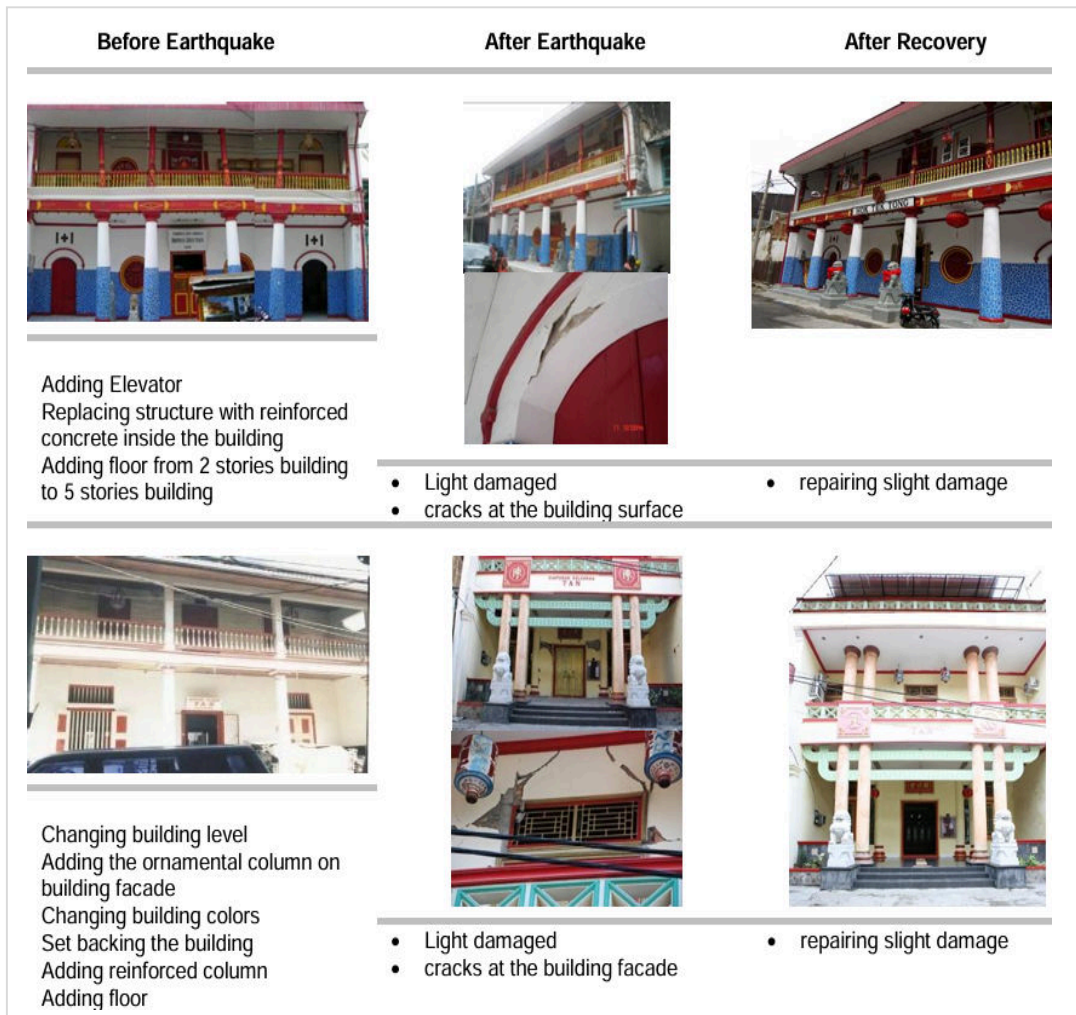


Figure 3. Chinese Association and Clan Association Building conditions pre-post-earthquake and post recovery

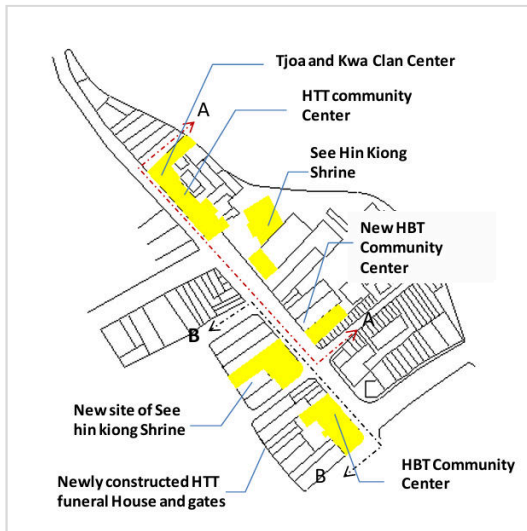


Figure 4. Location of community building and Funeral Building

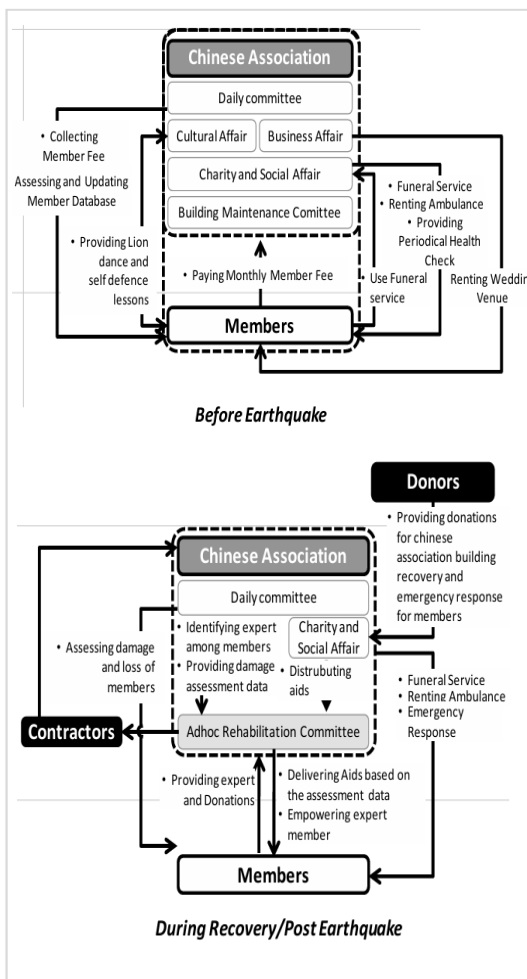


Figure 5. Recovery framework developed by chinese association before and after the earthquake

Rehabilitation of See Hin Kiong Temple

Cultural heritage of China in Padang Old Town, See Hin Kiong Shrine was built around 1841 and served as a place of worship for 168 years before the 2009 earthquake (BPCB Sumbar 2017). Identified as a cultural building since 2007, the shrine had a structural committee responsible for administrative tasks, managing donations, and maintaining the building. Despite its preservation efforts, the shrine had not undergone major rehabilitation since 1861. The 2009 earthquake caused significant damage, collapsing the roof's right and left side while the main temple building remained standing (Yoga Prasetyo 2024). Consequently, the historic worshipping place of 3,000 Buddhists in Padang was lost. In response, the Chinese community and the shrine's committee established a temporary worship place and proposed building a new shrine on a different lot, adhering to their belief that a collapsed shrine should not be rebuilt on the same site.

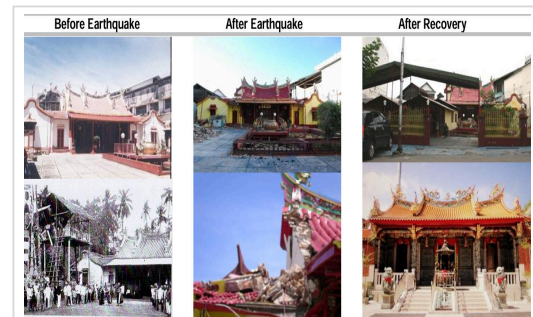


Figure 6. See Hin Kiong Building conditions pre-post earthquake and post recovery

Following the earthquake, the See Hin Kiong Shrine committee established a committee of rehabilitation of ad hoc to oversee recovery. This committee comprised three affairs: financial, rehabilitation, and logistics. The Financial affairs were in charge in gathering donations as well as submitting the donors' increase. The new shrine was established by the 500 donors before 2014 end. The Rehabilitation affair organized masons and networked with ancestors and masons from China. Given it was originally established 150 years ago by masons of China, it was challenging to engage merely masons which were local because of the knowledge weaknesses. The officials corresponded with China's ancestors in serving domestic houses to provide domestic masons for the reconstruction, utilizing the same methods as utilized more than a century ago.

Despite established in the new place with new things, they were certain the shrine they built is as honoring their ancestors by preserving the traditional building methods. The logistics affair provided recovery logistics and materials. The shrine was completely rebuilt before 2014 ended, and the new shrine for worshipping was begun to be utilized by the residents. Unfortunately, the government's plan in establishing a museum remains unfulfilled, leaving the site and rubble neglected.

Rehabilitation of the Catholic Monastery

A distinguished example of Sumatra Gothic revival as well as neo-Gothic establishment remaining is St. Leo Church, established in 1903 (World Monuments Fund 2009). Utilized as Catholic worshipping location and Dutch living places, St. Leo Church was built with no-reinforced bricks. Several cultural heritage buildings are incorporated in the complex such as the Santo Leo runnery's church, Cathedral church, the bishop's house, and Sukma indah runnery. It is the buildings possessing significant roles in the residents before the disaster, serving as locations of schools, housing, assembly, and worshipping. The Padang officials were generated in managing the programs like supplying logistics for continuous prayers, conducting services for public, managing events, and maintaining assets.

The 2009 earthquake caused severe structural damage to the Padang Catholic monastery buildings, with some parts collapsing. Given the large scale of the buildings, each exceeding 1000 square meters, the recovery required extensive restoration. The recovery process began with forming a rehabilitation committee, which managed the recovery efforts, provided logistics, organized masons, opened donations, connected the donors, managed assistance, and reported the donors' progress. Because donations had been before the earthquake maintained, the donor's network was already performed. The Padang diocese appealed for help through the network of Indonesian dioceses, collecting donations and obtaining technical support from outside-Padang experts. The experts were sent by Prahyanan Catholic University in serving recovery advice. The rehabilitation committee carefully chose retrofitting methods to rebuild better while maintaining the original shape of the buildings. The university meticulously recorded and documented the recovery process. Covering the roof and wall's inner part, replacing into structures of lighting roof, and original design of building restoring are encompassed in methods of retrofitting.

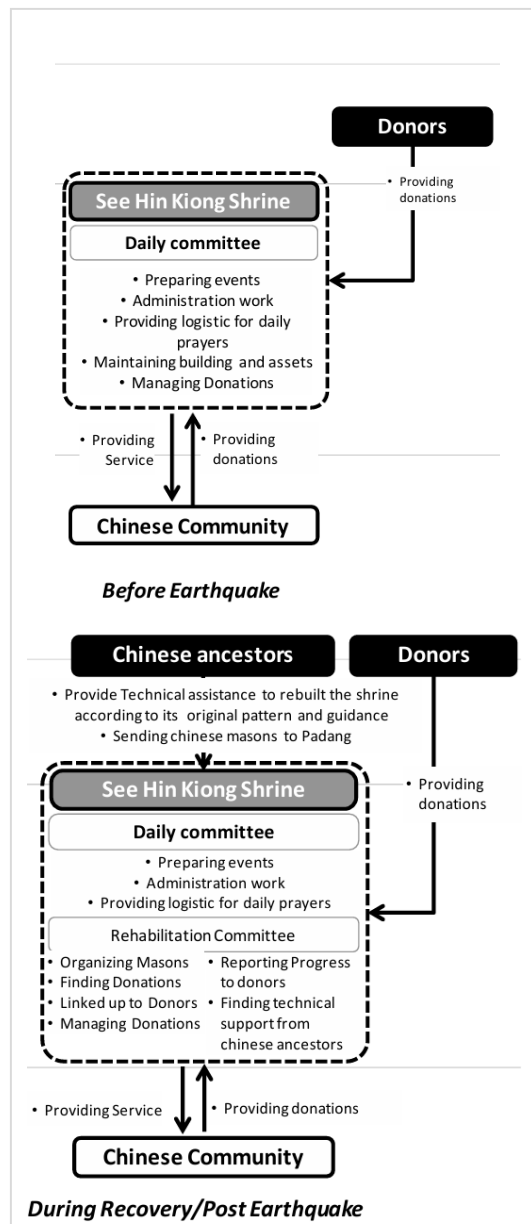


Figure 7. Recovery framework developed by See Hin Kiong Shrine



Figure 8. Catholic Monastery building conditions pre-post-earthquake and post recovery

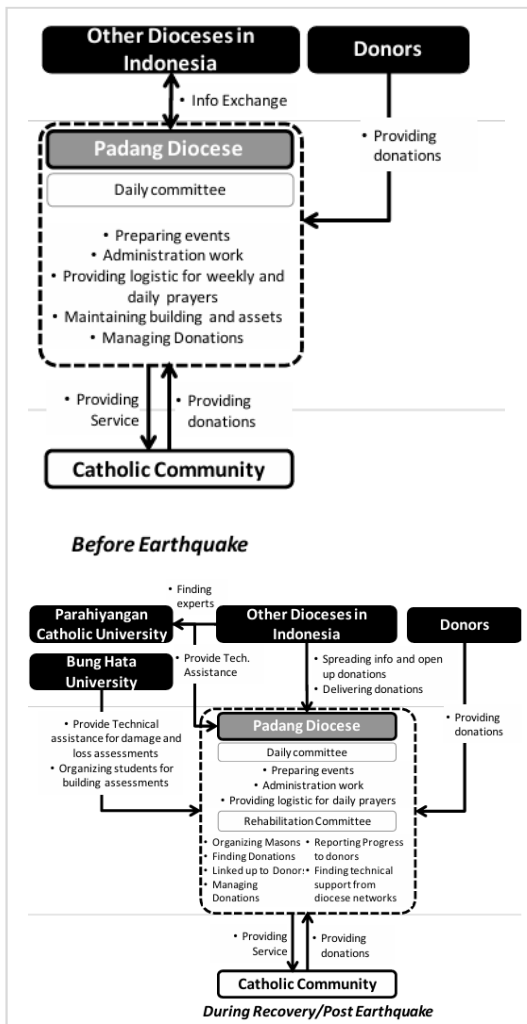


Figure 9. Recovery framework developed by Catholic Monastery Rehabilitation Committee

Rehabilitation of Muhammadan and Gantiang Mosque

Built in the 1790s, the Muhammadan and Gantiang mosques are among the oldest in Padang Old Town. The Muhammadan Mosque is notable for its Gujarati architecture, while the Gantiang Mosque showcases a multicultural design, incorporating elements from Persian, Middle Eastern, Chinese, Minangkabau, and European influences (Putra and Fatimah 2022). Before the earthquake, these mosques were actively used for daily prayers by the Islamic community, and children from nearby neighborhoods gathered every afternoon for Quran recitals. Despite the 2009 earthquake, the Muhammadan Mosque remains functional, though cracks now mark its walls and floor. The Gantiang Mosque suffered damage to its main facade, pillars, and minarets. The Muhammadan Mosque's pillars and the building behind it also show cracks, and one of its minaret crowns has collapsed. The authorities considered the destroyed buildings as structural.

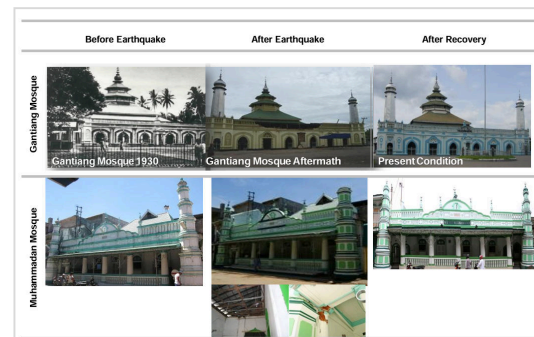


Figure 10. Muhamadan and Gantiang Mosque conditions pre-post-earthquake and post recovery

Television media reported the damage to the Muhammadan and Gantiang mosques after the earthquake. In response, Mandiri Bank utilized its CSR program in serving supports technically and financially restoring Gantiang Mosque. Similarly, an Indonesian TV station offered financial and technical aid for the Muhammadan Mosque. The mosque committee supervised the recovery efforts, with most planning and implementation carried out by the CSR contractors and team. They collaborated with BP3 (Prehistoric Legacy Conversation Center) Batusangka to restore the mosques to their original condition. By 2013, both mosques had been fully restored.

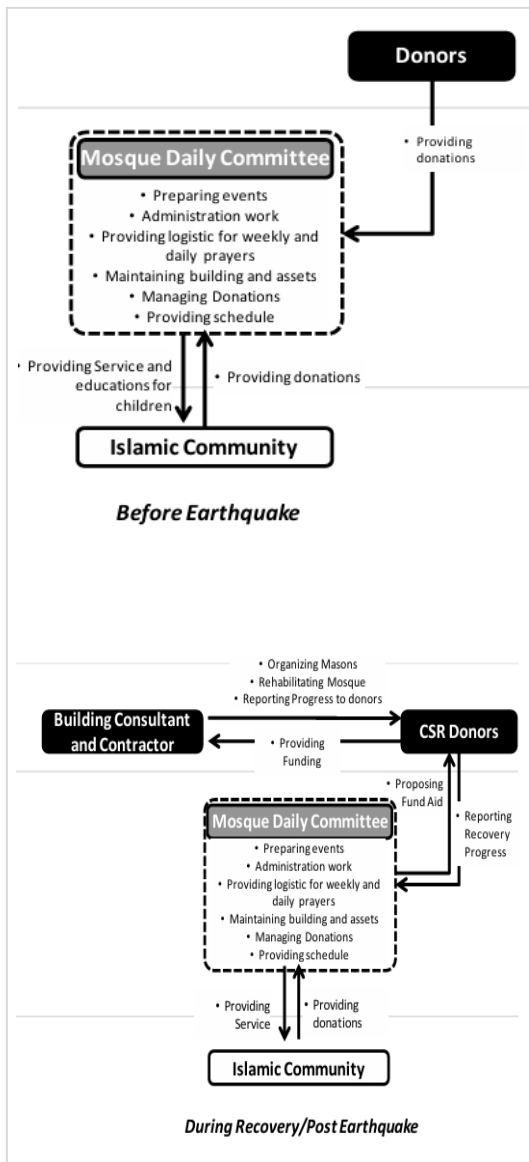


Figure 11. Muhamadan and Ganting Mosque Recovery Frameworks

The implementation of the Nara Protocol in the community-led recovery process.

This section will discuss these aspects according to six authenticity principles outlined in the Nara Protocol (World Heritage Centre 1994). These principles include (1) Form and Design, which refers to the physical shape and aesthetic composition of the heritage building; (2) Substance and materials, incorporated the original physical and materials usage in construction; (3) Function and Use, incorporated role and goal of pre and post disaster of heritage property; (4) Techniques and Traditions, encompassing post-

earthquake rehabilitation, skills, and practices; (5) Setting and Location, incorporating the heritage property environment and placement; and (6) Feeling and Spirit, grasping emotional bond incorporated with heritage buildings.

Form and design

Cultural design complexities balanced with challenges of practical restoration are emphasized Padang cultural building restoration in terms of the design and form. That the authenticity of the design and form should consider heritage dynamic context, historical continuity, and cultural context (Stovel 2019). Nonetheless, there was gaps in acquiring the balance on the distinguishing approaches implemented in the varied building restorations in Padang.

Adopting a whole new design and form, the Funeral House symbolizes an essential departure from the location of the pre-earthquake (World Heritage Centre 1994).

When the redesign has been justified by the functional needs (Khaerunnisa 2013), the question on historical identity loss occurs, as stated by Stovel (2019), who claimed that the cultural existence of a heritage location could be eroded by drastic changes. These alterations were also triggered by weak law enforcement and the authoritative representative absence in the middle of the robust people movements.

Traditional contextual implementation of design and form is illustrated by See Hin Kiong Temple. The Nara's concern in focusing historical context and cultural diversity is correlated with the restoration by noticing the Chinese historical design (Stovel 2019). Nonetheless, the external stylistic sources with traditional culture are challenged by the method.

Because of the insufficient data on the archive, Sukma Indah Nunnery and St. Leo's Chapel experienced tremendous challenges. It is supported by Jokilehto (2006) explaining that inadequate observation frequently causes erroneous authenticity interpretation. Similar post-earthquake restoration also examined in Kotagede, in which traditional shapes are altered by the seismic retrofitting utilizing authentic things (Khaerunnisa 2013).

Meanwhile, the original form of Ganting Mosque and Muhamadan Mosque are restored enormously due to donors' funded heritage architects. The call of Nara Protocol is validated by this outcome for the interdisciplinary cooperation in ensuring cultural design fidelity

(UNESCO-WHC 2011). The issues emphasize the method of experts in mitigating risks of authenticity in the recovery.

The examples indicate the crucial differences in implementing principles of Nara in generating and designing for the recovery of post-disaster. Others experienced suffering from the external interferences or insufficient documentation. The upcoming efforts should unite the hybrid methods and emphasize pre-disaster archive in maintaining the structural strength with the traditional continuity.

Material and substance

Inevitable debates in conserving heritage are in line with the substance authenticity and preserving material challenges during earthquake recovery of Padang's post recovery in 2009. Nara Protocol highlights that the authenticity of the material needs utilizing compatible and original substances in maintaining cultural principals (Stovel 2019). Nonetheless, the communities in counting on the substitutions of market availability, exposing cases reported in North Shoa Zone of Ethiopia, are insisted by the comprehensive material absence in Padang, in which the heritage integrity of irreversible compromises is emerged due to the restricted access on conventional materials (Mekonnen, Bires, and Berhanu 2022).

Use and function

The authentication preservation in the forms of function and use in Padang Old Town religious buildings is in accordance with the cultural continuity emphasis of Nara Protocol. This authenticity aspect is correlated in the context of post-disaster recovery, since it is integral with the heritage preservation tangibility and intangibility.

The significance of preserving the original function and use of traditional preservation has been emphasized by recent scholarship. (Stovel 2019) explains that in maintaining cultural heritage, sustainability is the primary factor. Robust evidence of this stance is demonstrated by the Padang's communal and worship activities continuation.

Even Lowthorp (2015) produced terms "fluid authenticity" during the restoration struggles as the inspiration of the building uninterrupted utilization. The principal indicates that although the structural concept changes, the function sustainability can preserve the cultural concept. Corroborating Khaerunnisa, SHIBATA, and

SAWAKI (2014) in which the social structure change and the space necessity absence interfere the historical portray in Padang Old Town, the inherent of the community should ensure to intact the original purposes of the spaces. This sustainable use of the buildings also maintains the cultural properties, that UNESCO identifies it as an in accordance with the identity of the community, since the buildings function as the physical principals in practices of the traditions.

In short, the authenticity principles of Nara Protocol are highly correlated with preserving the function and use of community and religious building in Padang. It represents a cultural heritage which maintain the cultural values and physical restoration balance, evidencing the tremendous cultural and community connections.

Tradition and technique

The tradition and technique attributes of Nara Protocol is illustrated variously by the religious and community buildings reconstruction in Padang Old Town, especially See Hin Kiong Temple and Chinese Funeral Houses. In accordance with emphasizing on the cultural respect in cultural preservation by Nara Document, the cultural practices on the pillars of Funeral House are inscribed by the donor names (Stovel 2019). This action proves that the tangible efforts of cultural restoration is correlated highly with the intangible traditions as explained in (Valeria Lo Iacono n.d.).

That the conservation decision is affected by the cultural customs has been represented by an event in which the relocation of See Hin Kiong Temple is performed because of disaster-struck location belief. It is in accordance with a research result conducted by Margari (2016), who highlights that it is crucial in respecting traditional belief in preserving cultural site authenticity. Nevertheless, in preserving the traditional identity of shapes in the relocation, there must be challenges encountered (Stovel 2019).

In preserving traditional belief in See Hin Kiong Temple, Chinese workers are employed in implementing traditional strategies in to reconstruct the authentic architectural style. This method is in accordance with Jokilehto (2006) who claimed that it is crucial in maintaining the conventional craftsmanship to preserve the traditional originality. The late See Hin Kiong Temple establishment applied this technique (Bastian, Erniwati, and Hardi 2018).

However, there is neither particular technique nor traditions were examined in Sukma Indah Nunnery, Muhammadan Mosque, St. Leo Chapel, and Ganting Mosque reconstruction. In correlation, traditional strategies absence indicates the failure in implementing Nara's principles that represents tangible and intangible cultural building dynamic preservation.

Location and setting

It is the See Hin Kiong Temple that was reestablished in different site, among other rehabilitated community and religious buildings. It is due to the belief of Buddhism that the temple reestablishment should be conducted not in disaster-affected area.

The difficulties in implementing the authenticity attributes of setting and location of Nara Protocol are evidenced by See Hin Kiong Temple relocation after 2009 earthquake. While the decision to rebuild the temple at a different site aligns with Buddhist beliefs prohibiting reconstruction in disaster-struck locations, it raises questions about spatial continuity and historical context. Stovel (2019) emphasizes that location is integral to authenticity, as it connects heritage sites to their cultural and environmental surroundings. Thus, the relocation to the different site disrupts the spatial connection to the district of Padang Old Town, although respecting the traditional belief. It indicates that the relocation of See Hin Kiong Temple less concerns on tangible spatial authenticity than the intangible heritage.

Therefore, the factors of spatial authenticity and cultural beliefs become debatable in post-disaster recovery in Padang. Meanwhile, the relocation of See Hin Kiong Temple demonstrates the emphasis on intangible values over the historical sustainability. Hence, it is evidenced that nuanced frameworks should be performed in balancing the principals of traditional conservation and religious cultures.

Spirit and feeling

As an effort in minimizing the risk of traditional authenticity of post-disaster recovery in terms of the emotional and spirit significance, it is necessary to perform community and religious building reconstruction. It is proved by the continuity of the building use after the earthquake.

Conclusions

The reconstruction of post-disaster buildings in 2009, Padang, Indonesia due to earthquake encounters difficulties especially in balancing the historical and spatial authenticity preservation. Thus, six authenticity concepts of Nara Protocol are presented in this study as an effort to preserve the traditional and religious authenticity of the buildings in the post-disaster recovery. However, material authenticity often suffered due to non-engineered retrofitting methods and a lack of comprehensive documentation. The varying approaches to form and design, as seen in the reconstruction of the Funeral House and See Hin Kiong Temple, reveal gaps in achieving a balance between cultural authenticity and practical restoration challenges.

The relocation of the See Hin Kiong Temple, guided by Buddhist beliefs, underscores the need for nuanced frameworks that respect religious traditions while preserving spatial authenticity. The continued use of religious and community buildings for worship and communal activities reflects a dynamic approach to heritage conservation, balancing physical restoration with preserving intangible cultural values.

Overall, this study highlights the importance of integrating Nara Protocol-based guidelines into disaster recovery frameworks is not only fulfilling the authenticity attributes, but to create balance among community needs, urgent reconstruction with cultural heritage preservation. Future efforts must prioritize pre-disaster documentation, interdisciplinary collaboration, and hybrid approaches that ensure resilience and cultural continuity.

References

- Bastian, Rober, Erniwati, and Etmi Hardi. 2018. "Kelenteng See Hin Kiong: Perubahan Fungsi Pada Masa Orde Baru."
- Du, Hehua, and Xingyue Wang. 2025. "Community Emergency Management Policy in China Using a Policy Text Tool." Edited by Chenfeng Xiong. *PLOS ONE* 20 (2): e0319239.

- <https://doi.org/10.1371/journal.pone.0319239>
- Erniwati, Erniwati. 2018. "140 Tahun Heng Beng Tong: Sejarah Perkumpulan Tionghoa 1876-2016." <https://doi.org/10.31227/osf.io/hrb97>.
- Gallou, Eirini, and Kalliopi Fouseki. 2022. *Managing Participatory Heritage for Enhancing Social Well-Being*. Edited by Kalliopi Fouseki, May Cassar, Guillaume Dreyfuss, and Kelvin Ang Kah Eng. London: Routledge Handbook of Sustainable Heritage.
- Gianisa, Adisaputri, and Loic Le De. 2018. "The Role of Religious Beliefs and Practices in Disaster." *Disaster Prevention and Management* 27 (1): 74–86. <https://doi.org/10.1108/DPM-10-2017-0238>.
- Irwan, Irwan, Gina Syakia, Windy Anastasya Nur Hidayah, Felia Siska, and Neffi Sulkaisi. 2024. "Religious and Cultural Diversity: The Chinese Village Community of Padang City." *International Journal of Educational Research Excellence (IJERE)* 3 (1): 110–16. <https://doi.org/10.55299/ijere.v3i1.792>.
- Jigyasu, Rohit. 2018. "Nara and beyond: Implications on Risk Preparedness, Recovery, and Heritage Management." *Conversaciones* 8:209–24.
- Jokilehto, Jukka. 2006. "Considerations on Authenticity and Integrity in World Heritage Context."
- Khaerunnisa. 2013. "The Vulnerability of Javanese Traditional Joglo Houses Due to the Homeowner-Driven Rehabilitation and Recovery before and after The 2006 Yogyakarta and Central Java Earthquake." *Journal of International City Planning*, 729–39.
- Khaerunnisa, Yu SHIBATA, and Masanori SAWAKI. 2014. "The Vulnerability of Cultural Heritage Building Due to Rehabilitation Before The Earthquake and Recovery After West Sumatra Earthquake 2009 at Old Town District, Padang, Indonesia." *Journal of Architecture and Planning (Transactions of AIJ)* 79 (695): 285–92. <https://doi.org/10.3130/aija.79.285>.
- Lattig, Jesse W. 2012. "Calamities, Catastrophes, and Cataclysms: Current Trends in International Disaster Risk Management Practices for Cultural Heritage Sites." University of Pennsylvania. http://repository.upenn.edu/hp_theses/191.
- Lowthorp. 2015. "Voices on the Ground: Kutiyattam, UNESCO, and the Heritage of Humanity." *Journal of Folklore Research* 52 (2–3): 157. <https://doi.org/10.2979/jfolkrese.52.2-3.157>.
- Margari, Zoi N. 2016. "Dance Advocacy in the Age of Austerity: UNESCO's Intangible Cultural Heritage Convention and the Case of Dance." *Congress on Research in Dance Conference Proceedings 2016 (August)*:240–50. <https://doi.org/10.1017/cor.2016.33>.
- Mekonnen, Habtamu, Zemenu Bires, and Kassegn Berhanu. 2022. "Practices and Challenges of Cultural Heritage Conservation in Historical and Religious Heritage Sites: Evidence from North Shoa Zone, Amhara Region, Ethiopia." *Heritage Science* 10 (1): 172. <https://doi.org/10.1186/s40494-022-00802-6>.
- Putra, Fero, and Siti Fatimah. 2022. "Menganalisis Bentuk Arsitektur Masjid Raya Ganting Padang Di Sumatra Barat." *JRTI (Jurnal Riset Tindakan Indonesia)* 7 (4): 701–6.
- Refni Yulia, Meri Erawati, and Nopriyasman. 2016. "Analysis of Policy and Management of Old Town Based-Tourism in Padang City," October. www.mindamas-journals.com/index.php/tawarikh.
- Stovel, Herb. 2019. "Origins and Influence of the Nara Document on Authenticity" 8:12–30. <https://revistas.inah.gob.mx/index.php/conversaciones/article/view/15667>.
- Teguh, Mochamad. 2011. "Sharing Experiences and Lessons Learned in Disaster Management System in Indonesia." *Asian Transactions on Engineering* 1 (5): 35–44.
- The World Bank. 2017. "Promoting Disaster Resilient Cultural Heritage KNOWLEDGE NOTE." <http://www.unesco.org/new/en/cairo/culture/tangible-cultural-heritage/>.
- UNESCO. 2009. *Hoi An Protocols for Best Conservation Practice in Asia*. UNESCO.
- UNESCO-WHC. 2011. "Statement on the Protection of Religious Properties within the Framework of the World Heritage Convention." 2011.
- UNISDR. 2015. "Sendai Framework for Disaster Risk Reduction 2015 - 2030."
- WHC UNESCO. 2016. "Strengthening the Role of Local Communities in the Management and Conservation of World Heritage Sites."

- <https://whc.unesco.org/en/news/1477>.
April 12, 2016.
- World Heritage Centre. 1994. "THE NARA DOCUMENT ON AUTHENTICITY Preamble." <http://whc.unesco.org/events/gt-zimbabwe/nara.htm>.
- World Monuments Fund. 2009. "Padang Heritage Sites." 2009.
- <https://www.wmf.org/monuments/padang-heritage-sites>.
- Yoga Prasetyo. 2024. "See Hin Kiong, Klenteng Tertua Di Kota Padang." 2024. <https://westsumatra360.com/9-sastra-lisan-asal-sumatra-barat-yang-terancam-punah/>.