



POST-DISASTER TEMPORARY HOUSING: A CRITICAL REVIEW OF SHELTER TYPOLOGIES, SUSTAINABILITY, CULTURAL ADEQUACY AND ADAPTABILITY

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ABSTRACT.

Post-disaster temporary housing occupies a critical but conceptually ambiguous position between emergency sheltering and durable recovery. Although temporary accommodation is intended to restore basic security and support recovery, the literature repeatedly identifies problems of cultural inadequacy, environmental burden, hidden economic costs, inflexibility and weak transition to permanent housing. This critical review synthesises literature and the shelter typologies, case material and design concepts developed in the underlying research to examine temporary housing as a socio-spatial recovery system rather than a discrete physical product. The review analyses emergency, intermediate, temporary, transitional, progressive, core, rental and permanent pathways; evaluates whole-life sustainability; examines cultural adequacy at site, settlement and dwelling scales; and considers flexibility, participation and incremental transformation. It proposes a transition-oriented framework linking context assessment, household and cultural assessment, pathway selection, site and services, adaptable implementation, and after-use planning. The review argues that the performance of temporary housing should be judged by its capacity to preserve future options, support everyday life and facilitate dignified movement towards durable recovery.

Keywords: Cultural adequacy; Disaster recovery; Post-disaster housing; Sustainability; Temporary housing; Transitional shelter.

INTRODUCTION

Disaster-related housing loss is not simply a problem of replacing damaged buildings. Housing provides a physical setting for privacy, domestic routines, social interaction, livelihood activity, security, identity and attachment to place. When a disaster renders a dwelling unsafe, these functions may be disrupted simultaneously. Post-disaster sheltering consequently operates at the intersection of humanitarian assistance, architecture, planning, infrastructure provision, social recovery and economic reconstruction. The underlying research similarly distinguishes between the immediate provision of shelter and the wider function of housing in enabling people to resume work, education, household activities, social relations and everyday life.

Temporary housing is particularly difficult to plan because it must respond to uncertainty. Immediately after a disaster, information about damage, land, household needs, infrastructure and the duration of displacement is incomplete. At the same time, authorities and humanitarian organisations face pressure to deliver large numbers of units quickly. Rapid procurement and standardisation can therefore appear rational. Yet the temporary period can extend for months or years, converting an apparently short-term intervention into a long-term living environment. Félix et al. (2013) identify sustainability, cultural inadequacy, flexibility and the design of surrounding space as recurring problems, while later work continues to show that the journey from shelter to housing recovery is often non-linear and shaped by pre-existing vulnerability (Yore et al. 2025).

The distinction between a temporary structure and a temporary housing process is therefore fundamental. A unit can be temporary in duration while requiring qualities normally associated with permanent housing: safety, privacy, thermal comfort, sanitation, storage, cooking, social interaction, access to livelihoods and the ability to change as household circumstances evolve. Recent research also reinforces the interdependence between architectural variables and social outcomes, showing that shelter size, material selection, spatial layout and comfort influence safety, privacy, health, cultural appropriateness and participation (Gkoumas et al. 2026).



This review builds on the conceptual and empirical material developed in the underlying research, particularly its analysis of shelter typologies, sustainability, cultural adequacy, flexibility and incremental transformation. It deliberately does not reproduce a single disaster case as the empirical focus. Instead, it uses examples from the literature as comparative evidence for developing a general framework. The objective is to move beyond the familiar question of how quickly temporary units can be delivered and ask a more consequential question: how can temporary housing be designed and governed so that it becomes a productive stage in recovery rather than a dead end?

RESEARCH GAP AND REVIEW PROPOSITION

Existing scholarship provides substantial evidence on individual aspects of post-disaster housing, including shelter typologies, participation, cultural adequacy, life-cycle impacts and flexibility. However, these dimensions are often discussed separately. The resulting policy problem is a fragmented decision process in which speed, cost, safety, cultural fit, participation and after-use are evaluated by different actors and at different stages. Decision-making research has highlighted the need to align operational, managerial and strategic levels in order to support holistic recovery (Pezzica et al. 2021). The proposition advanced here is that temporary housing should be assessed as a connected recovery system whose quality depends on relationships between dwelling, settlement, household, institutions and future housing pathways.

Shelter and Housing as a Recovery Continuum

The underlying research presents a sequence of emergency shelter, temporary shelter, temporary housing, transitional shelter, progressive shelter, core shelter and permanent housing. These categories are useful because they indicate changing requirements as the duration and purpose of accommodation evolve. They should not, however, be interpreted as a universal linear sequence. Households can remain with relatives, enter rental housing, repair an existing dwelling, self-build, move between temporary sites or transition directly from emergency accommodation to permanent reconstruction. Recent longitudinal research similarly demonstrates non-linear shelter and housing journeys, particularly among households experiencing severe damage and pre-existing vulnerabilities (Yore et al., 2025). Figure 1. Post-disaster shelter and housing pathways.

Source: Adapted from the National Disaster Management Authority (NDMA) Guidelines.

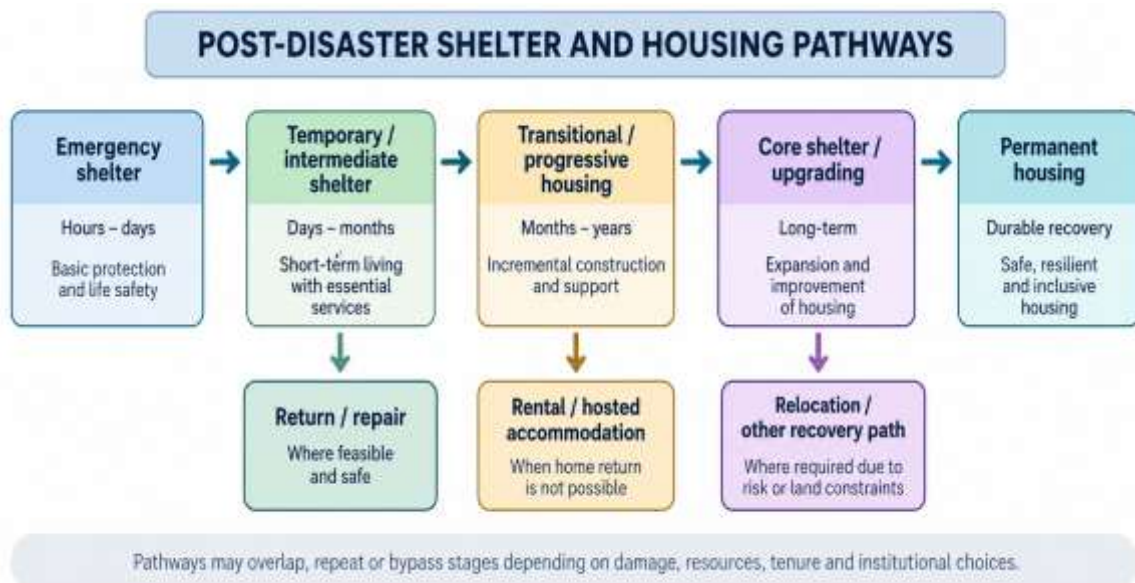


Figure 1. Post-Disaster Shelter and Housing Pathways.

Source: Adapted from National Disaster Management Authority Guidelines.



Table 1. Functional distinction among major post-disaster accommodation pathways

Pathway	Primary purpose	Indicative temporal role	Key performance requirement	Typical transition
Emergency shelter	Immediate protection and life safety	Hours–days	Rapid protection, privacy, basic WASH and security	Return, hosting, temporary/intermediate option
Temporary shelter	Short-duration refuge after immediate emergency	Days–weeks	Speed, basic habitability, low deployment complexity	Intermediate/temporary housing
Intermediate shelter	Bridge while permanent options develop	Weeks–months	Greater stability, comfort and resilience	Repair, reconstruction, rental or progressive housing
Temporary housing	Support everyday life during extended recovery	Months–years	Habitability, services, affordability and cultural fit	Permanent housing or upgrading
Transitional shelter	Bridge that can be transformed or reused	Variable	Adaptability, reuse and household agency	Upgrade, relocation, resale or permanent use
Progressive shelter	Initial dwelling designed for later improvement	Variable/long term	Safe incremental expansion	Permanent dwelling through upgrading
Core shelter	Basic permanent platform with services	Long term	Structural core and future expansion	Incremental completion
Rental accommodation	Use of existing safe housing stock	Short–medium term	Affordability, tenure and proximity to livelihoods	Return, repair or permanent housing

The distinction is important because inappropriate duration assumptions can create a mismatch between housing performance and actual occupation. The underlying research notes that emergency shelters are intended primarily for immediate protection, while intermediate shelters require greater resilience, comfort and stability. This distinction is consistent with NDMA's emphasis on intermediate shelter as a response to the period between immediate danger and permanent reconstruction. Accordingly, the longer households remain displaced, the more temporary accommodation must perform as housing rather than merely as shelter.

Typological evidence from the underlying research

The shelter photographs and examples assembled in the thesis demonstrate the substantial physical diversity of post-disaster accommodation. They are valuable not merely as illustrations but as evidence of the different relationships between portability, permanence, privacy, social density and user control. To strengthen the analytical value of the figures, each example is interpreted below through a common set of questions: What problem does the intervention solve? What does it make possible? What remains unresolved?



Figure 2. FEMA Mobile Homes Used for Disaster Housing After Hurricane Katrina.

Source: Adapted from Eaton (2007). The example illustrates high physical mobility but also the potential rigidity of transport-oriented manufactured units.

Mobile homes illustrate a model in which portability is prioritised. The principal advantage is the ability to transport a complete dwelling as a volumetric object. However, portability should not be confused with adaptability. A unit can be easy to move while being difficult to extend, reconfigure or maintain locally. The underlying research therefore identifies a central design paradox: mobility in one dimension may produce rigidity in others.



Figure 3. Emergency shelter by Shigeru Ban Architects following the East Japan earthquake and tsunami. Source cited in the underlying research: Shinkenchiku-sha (2011, p. 122).

Collective emergency accommodation demonstrates the difference between immediate protection and domestic privacy. Such arrangements can rapidly create a protected indoor environment, but the internal organisation of space, separation between households, storage and personal territory become increasingly important when occupation extends.



Figure 4. Temporary shelter following the Haiti earthquake, 2010. Source cited in the underlying research: Calzadilla and Martin (2011).

The Haiti example demonstrates the pragmatic value of rapidly erected shelters, while also revealing the exposure of temporary accommodation to environmental conditions and the need for appropriate sanitation, security and settlement infrastructure. Temporary housing must therefore be assessed as part of a site system rather than as an isolated enclosure.



Figure 5. Temporary housing in Kesennuma, Miyagi Prefecture, following the 2011 Japan earthquake and tsunami. Source cited in the underlying research: Imakawa (2014).

More substantial temporary dwellings demonstrate the transition from emergency protection to domestic occupation. The longer the anticipated stay, the more relevant questions of thermal performance, cooking, privacy, household size, storage and adaptability become. Such units can support recovery more effectively than short-duration shelters, but their success remains dependent on settlement location, services, management and the availability of a pathway beyond temporary occupation.



Figure 6. Transitional shelter by Habitat for Humanity, Haiti, 2010. Source cited in the underlying research: Habitat for Humanity (2010).

Transitional shelter introduces the idea that a temporary investment can have residual value. Components may be reused, the structure may be adapted, or the shelter may become part of a later permanent dwelling. This principle is central to the transition-oriented argument developed in this review: the temporary phase should preserve future options rather than create a new waste stream.



Figure 7. Unfinished building inhabited by displaced Syrian refugees in Duhok, Kurdistan Region of Iraq. Source cited in the underlying research: IFRC, UN-Habitat and UNHCR (2014, p. 30). The example illustrates how existing buildings may become temporary accommodation while raising safety and security concerns. Use of unfinished buildings demonstrates that temporary accommodation is not synonymous with purpose-built temporary units. Existing buildings can provide immediate capacity, but structural safety, services, weather protection and tenure must be assessed. This supports a broader definition of temporary accommodation in

which rental housing, hosting, public buildings, unfinished structures and purpose-built units are considered within the same decision framework.

TYPOLOGIES OF TEMPORARY HOUSING: FROM OBJECTS TO STRATEGIES

The underlying research groups temporary shelter solutions into assembly-based shelters, construction-based shelters and rental accommodation. This classification is useful because it shifts attention from the appearance of a shelter to the mechanism through which accommodation is produced.

Assembly-based shelters

Assembly-based systems include tents, shelter kits, prefabricated units and container-based approaches. Their principal strength is speed and repeatability. However, external manufacture can introduce transport dependence, specialist installation, procurement delays and disposal problems. The thesis material also notes that prefabricated units can be difficult to modify and may have low acceptance where standard designs do not correspond to household needs.

Construction-based shelters

Construction-based shelters use locally available, external or reclaimed materials and can be constructed in situ or ex situ. Their potential advantages include local employment, familiarity of construction, easier repair and opportunities for incremental upgrading. The underlying research emphasises vernacular materials and local expertise as mechanisms for both technical and social recovery. Yet localisation should not become an uncritical assumption: materials must be evaluated for structural adequacy, durability, ecological impact, availability and compatibility with the hazard environment.

Rental accommodation

Rental accommodation should be recognised as a strategic temporary housing pathway rather than treated as an external alternative. Where safe housing stock remains available, rental assistance can reduce the need for new temporary settlements and preserve access to employment, education and social networks. Its principal constraints are affordability, vacancy, tenure security and administrative capacity. A recovery framework that considers rental housing alongside construction-based and assembly-based options is therefore more capable of matching the intervention to local conditions.

SUSTAINABILITY: A WHOLE-LIFE PERSPECTIVE

Temporary housing is often justified through a short-term cost logic: the objective is to provide a large number of units rapidly and within constrained budgets. Such a calculation can be misleading because the cost of temporary housing includes material production, transportation, site preparation, infrastructure, operation, maintenance, modification, dismantling and after-use. Atmaca (2017) demonstrates the relevance of life-cycle assessment to post-disaster temporary housing, while Félix et al. (2013) argue for a systemic approach to sustainability.

The environmental dimension includes embodied impacts of materials, transport energy, site disturbance, operational energy and waste at the end of use. The economic dimension includes not only procurement but also infrastructure, maintenance, household travel and the costs of dismantling or disposal. The social dimension includes the consequences of poor location, overcrowding, cultural mismatch and reduced livelihood access. Sustainability is therefore better conceptualised as a multi-dimensional performance condition.



Figure 8. Whole-life sustainability logic for temporary housing. Source: Author's synthesis informed by Atmaca (2017), Félix et al. (2013) and the underlying research.



Table 2. Whole-life sustainability assessment for temporary housing

Lifecycle stage	Potential impact	Critical question	Design / policy response
Procurement	Over-specification or unsuitable systems	Does the selected system match the actual recovery scenario?	Context-specific option appraisal
Manufacture	Embodied energy/material demand	Where and how are components produced?	Prefer efficient, durable and repairable components
Transport	Fuel, cost and logistics	How far must units/materials travel?	Use local supply chains where technically appropriate
Site preparation	Land disturbance and infrastructure cost	What new roads/services are required?	Prioritise serviceable, safe sites
Occupation	Energy, thermal comfort, maintenance	Can households operate and maintain the unit?	Climate-responsive passive design and accessible maintenance
Adaptation	Material waste from modifications	Can needs change without demolition?	Design for safe adaptation and incremental growth
After-use	Waste, removal and site restoration	What happens when the temporary phase ends?	Plan for reuse, relocation, recycling or deconstruction from the outset

The after-use problem

A major weakness in temporary housing is that the end of use is frequently treated as an administrative problem rather than a design criterion. The underlying research notes that robust temporary units can remain physically usable beyond their intended period, while dismantling may itself require substantial labour, transport and expenditure. Consequently, the after-use pathway should be established before procurement. Each major component can be classified as one of four futures: remain and upgrade; relocate and reuse; recover materials; or deconstruct and dispose safely.

Cultural Adequacy and the Socio-Spatial Meaning of Home

Cultural adequacy is not equivalent to reproducing the visual appearance of traditional architecture. It concerns the ability of housing and settlement environments to support ways of living, household organisation, social interaction, privacy, livelihood practices and meanings attached to place. Sukhwani et al. (2021) identify housing policy, public spaces, cultural background and co-design as important dimensions of cultural adequacy in temporary housing. The underlying research similarly identifies four connected factors in resettlement: site, settlement layout, housing and policy.

Site selection is often the first point at which technical and cultural definitions of safety diverge. A location can be physically safer but socially dysfunctional if it separates households from livelihoods, social networks or culturally important landscapes. The fishing-community example in the thesis demonstrates this tension: relocation away from the coast was understood differently by authorities concerned with hazard reduction and by households whose livelihoods depended on proximity to the sea. Comparable tensions appear in the Gediz and Wolofeo examples discussed in the underlying research, where settlement location and layout conflicted with agricultural practices, kinship structures and ritual spaces.



Figure 9. Cultural adequacy operates across site, settlement, dwelling and policy/process. Source: Author's synthesis based on Sukhwani et al. (2021) and the underlying research.

Table 3. Cultural adequacy as a multi-scalar performance criterion

Scale	Dimension	Diagnostic questions	Potential consequence of mismatch
Site	Livelihood and place	Is the site safe and connected to livelihood systems and essential institutions?	Economic loss, resistance, return to unsafe areas
Settlement	Social structure	Does layout support kinship, privacy, community interaction and collective practices?	Isolation, loss of networks, low acceptance
Dwelling	Domestic life	Does the unit support household size, cooking, privacy, storage and daily routines?	Informal unsafe alterations, dissatisfaction
Policy/process	Agency and legitimacy	Can residents influence relevant decisions and understand the recovery pathway?	Low trust, weak uptake and conflict

Standardisation versus contextualisation

Standardisation is not inherently incompatible with cultural adequacy. Repetition can reduce procurement complexity, simplify maintenance and support rapid construction. The problem occurs when standardised components become standardised ways of living. A more sophisticated strategy is to standardise structural or



service components while allowing variation in plan configuration, privacy arrangements, entrances, extensions and shared spaces.

Recent evidence strengthens this position. Gkoumas et al. (2026) identify shelter size, materials, spatial layout and comfort as design parameters with direct relationships to safety, privacy, health, cultural appropriateness and participation. This reinforces the argument that social outcomes should be considered during architectural decision-making rather than assessed only after construction.

FLEXIBILITY, ADAPTABILITY AND INCREMENTAL TRANSFORMATION

The concept of flexibility is central to the underlying research because post-disaster households are not static. Family size, employment, income, care responsibilities and social relationships change over time. A shelter that cannot accommodate these changes may rapidly become obsolete even when its structural performance remains satisfactory. Schneider and Till (2007) distinguish strategies through which housing can vary, move, evolve and expand, while the thesis further examines movable, demountable, modular and incremental approaches.

The framework distinguishes initial flexibility before occupation from post-occupation flexibility. Initial flexibility can provide households with choices among layouts or components. Post-occupation flexibility can occur through mobility, evolution or elasticity. Mobility supports day-to-day changes; evolution supports medium- and long-term changes in internal organisation; elasticity allows expansion or contraction of floor area.



Figure 10. Demountable temporary housing (Kasetsu Jutaku) in Japan following the 2011 earthquake. Source cited in the underlying research: House of Japan (2011). The example illustrates the distinction between demountability and simple portability.

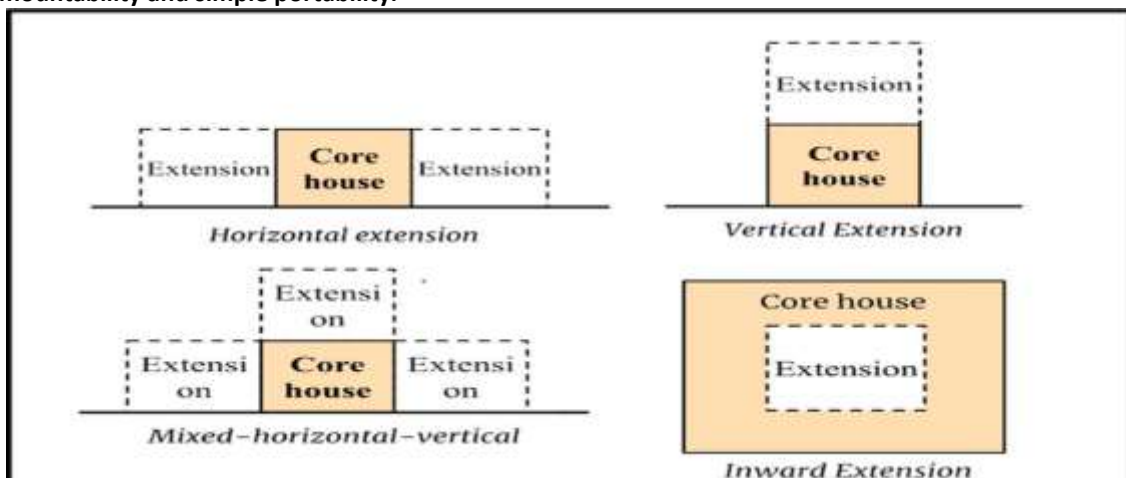


Figure 11. Incremental house evolution types illustrating horizontal, vertical, mixed horizontal-vertical and inward extension strategies. Source: Underlying research/thesis material.



Elasticity is particularly relevant to recovery because households may gain resources gradually. A core dwelling can establish a safe structural base while leaving planned opportunities for additional rooms, verandas, storage, workspaces or other functions. The logic is visible in incremental housing precedents such as the ELEMENTAL houses discussed in the underlying research, where the initial intervention establishes a framework that can be completed by residents.



Figure 12. Elasticity through soft systems: incomplete housing associated with ELEMENTAL, Quinta Monroy, Chile. Source cited in the underlying research: Aravena and Iacobelli (2012, pp. 148–149).

Table 4. Flexibility strategies and their relevance to post-disaster housing

Strategy	Scale of change	Possible mechanism	Recovery value	Principal limitation
Variation	Before occupation	Choice among layouts/components	Better initial fit	Requires decision time and design options
Mobility	Daily	Movable furniture/partitions	Supports multiple activities	Privacy/acoustic limitations
Evolution	Medium/long term	Neutral rooms, open plans, accessible services	Responds to household change	Services can constrain change
Elasticity	Long term	Horizontal/vertical extension	Allows household investment to accumulate	Structural/planning constraints
Demountability	Relocation/reuse	Reversible connections, kit-of-parts	Preserves residual value	Requires good detailing and management
Incremental upgrading	Temporary → permanent	Core + expandable structure	Reduces discontinuity between phases	Needs technical guidance and finance

From flexibility as technology to flexibility as agency

A key PhD-level distinction is between technical flexibility and lived flexibility. A building may contain sliding walls, modular panels or sophisticated joints yet remain functionally inflexible if residents cannot operate, afford or legally modify them. Conversely, a simple structure using familiar materials may offer substantial adaptability because residents understand how to repair and extend it. Flexibility should therefore be evaluated through the interaction of physical capacity, user knowledge, affordability, regulation and institutional support.



COMMUNITY PARTICIPATION: FROM CONSULTATION TO DECISION INFLUENCE

Participation is frequently invoked in post-disaster housing but is often treated as synonymous with consultation. Arnstein's (1969) ladder demonstrates that information and token consultation represent very different levels of citizen power. Davidson et al. (2007) further caution against assuming that participation automatically guarantees successful reconstruction. The relevant question is therefore: which decisions are open to community influence, at what stage, and with what information and technical support?

For temporary housing, meaningful participation can concern site selection, household grouping, privacy, cultural practices, public-space design, material preferences, livelihood requirements, adaptation rules and after-use options. Technical safety standards may remain non-negotiable, but residents can still shape how safe housing is organised and inhabited. Sadiqi et al. (2017) demonstrate that institutional and professional barriers can constrain participation, indicating that participation requires organisational capacity rather than goodwill alone.

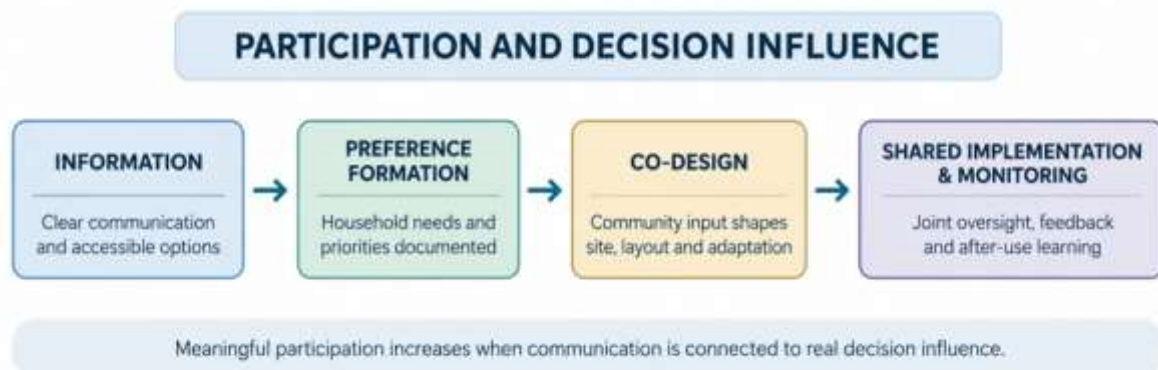


Figure 13. Participation becomes meaningful when communication is connected to decision-making influence.

Source: Author's synthesis based on Arnstein (1969), Davidson et al. (2007) and Sadiqi et al. (2017).

THERMAL COMFORT, HEALTH AND EVERYDAY HABITABILITY

Temporary housing can fail even when it satisfies basic structural requirements because environmental comfort is insufficient. Thermal conditions, ventilation, daylight, humidity, noise, privacy and sanitation influence whether a shelter can support prolonged occupation. Recent research identifies enclosure performance, thermal comfort and everyday habitability as important dimensions of post-disaster shelter performance, particularly when supposedly temporary accommodation is occupied for extended periods (Gkoumas et al. 2026). Recent work also connects comfort with health, emotional resilience and social well-being (Gkoumas et al. 2026).

For architectural practice, this means that the temporary classification should not be used to justify a lower environmental standard. Climate-responsive orientation, shading, ventilation, insulation where appropriate, daylight, moisture control and safe cooking arrangements can be incorporated into relatively simple construction systems. The most appropriate solution will vary by climatic zone; consequently, generic global shelter prototypes should be evaluated against local climatic and cultural conditions before deployment.

LIVELIHOODS, INFRASTRUCTURE AND SETTLEMENT LOCATION

The dwelling is only one component of temporary housing. Roads, water, sanitation, electricity, waste management, schools, healthcare, markets and employment opportunities determine whether a settlement can support recovery. Relocation to peripheral sites may solve one hazard problem while generating new vulnerabilities through livelihood disruption, transport costs and social isolation.

The literature therefore supports a shift from unit-based evaluation to settlement-based evaluation. A temporary housing proposal should be accompanied by an infrastructure and livelihood assessment. Where safe existing housing is available, dispersed rental assistance may avoid the environmental and social costs of creating a new settlement. Where new construction is unavoidable, site selection should integrate hazard safety with access, services, livelihoods and social networks.



PROPOSED TRANSITION-ORIENTED FRAMEWORK

The preceding synthesis supports a six-stage framework. Its purpose is not to prescribe one shelter type, but to establish a decision logic that allows different solutions to be compared against the same recovery objectives. The framework also responds to the decision-making gap identified in recent review literature: temporary housing decisions need alignment between strategic recovery goals, managerial coordination and operational delivery.

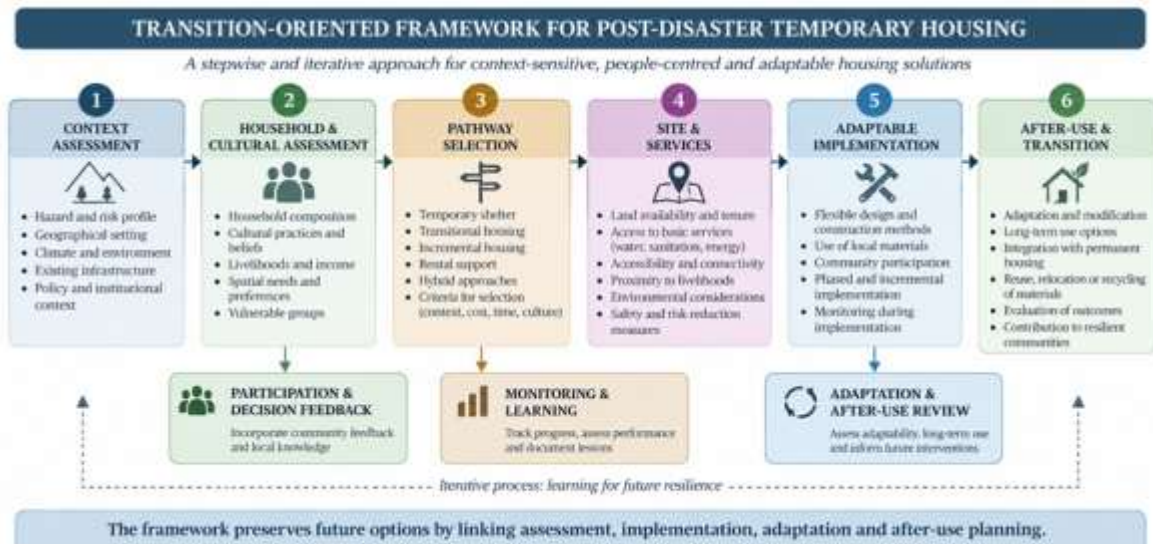


Figure 14. Proposed transition-oriented framework for post-disaster temporary housing. Source: Author's conceptual synthesis.

Table 5. Operational structure of the proposed framework

Stage	Principal decision	Indicative evidence	Expected output
1. Context assessment	Hazard, climate, land, infrastructure and expected duration	Hazard maps, site survey, climate data, damage assessment	Context profile and constraints
2. Household & cultural assessment	Household size, vulnerability, privacy, livelihood and cultural requirements	Household profiles, interviews, participatory mapping	Needs and cultural profile
3. Pathway selection	Repair, hosting, rental, temporary, transitional, progressive or permanent	Damage severity, land/tenure, housing stock, finance	Preferred pathway and alternatives
4. Site & services	Settlement location, WASH, energy, access, public space	Infrastructure inventory, travel time, service capacity	Serviced settlement strategy
5. Adaptable implementation	Materials, construction system, participation and safe modification	Design options, technical details, local skills	Adaptable housing package
6. Transition & after-use	Upgrade, relocation, reuse, recycling or deconstruction	Exit plan, material inventory, monitoring	Recovery transition and residual-value plan



Performance criteria

The framework can be operationalised through seven performance criteria: safety, dignity, cultural adequacy, sustainability, affordability, adaptability and transition. Safety should cover hazard exposure and structural performance; dignity should include privacy, sanitation and basic domestic functions; cultural adequacy should assess household and settlement fit; sustainability should consider whole-life impacts; affordability should include institutional and household costs; adaptability should evaluate safe physical and social change; and transition should assess the clarity and feasibility of the next recovery stage.

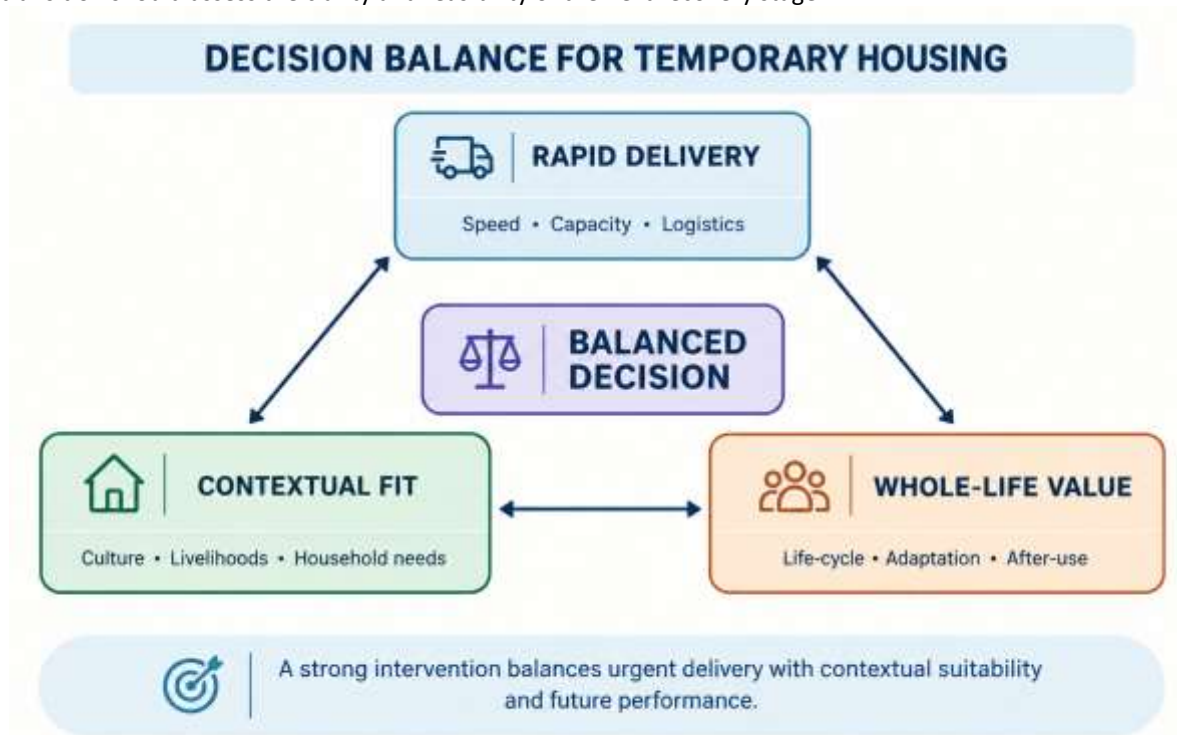


Figure 15. Decision balance between rapid delivery, contextual fit and whole-life value. Source: Author's conceptual synthesis.

CRITICAL DISCUSSION

The review indicates that the central challenge of temporary housing is not a lack of possible technologies. A wide range of solutions already exists, from tents and shelter kits to prefabricated units, mobile homes, rental housing, local construction, transitional shelters and incremental dwellings. The more difficult problem is selecting and governing the appropriate combination for a particular context.

First, speed and quality should not be treated as mutually exclusive variables. The choice of procurement strategy, pre-disaster planning and modularity can reduce the time required for context-sensitive decisions. Pre-approved families of components, local supplier networks, household profiling and participatory protocols can make contextualisation faster rather than slower.

Second, standardisation should occur at the level of systems rather than lifestyles. Structural modules, service components, connectors and construction details can be standardised while allowing variation in layout, privacy, extensions and public-space organisation. This reconciles the operational benefits of repetition with the socio-cultural diversity of affected households.

Third, temporary housing needs an explicit temporal logic. If the expected duration of displacement is uncertain, the design should retain multiple future pathways. A unit might become a permanent house, be relocated, be reused for another household, or be dismantled for material recovery. Designing for only one future is risky because recovery conditions change.



Fourth, participation should be understood as a mechanism for improving decision quality, not simply as a normative requirement. Residents possess knowledge about household routines, climate, local materials, livelihood systems and social networks that external agencies may not have. However, participation requires boundaries, technical translation and institutional accountability. The objective is not to transfer engineering responsibility to households but to combine professional expertise with lived knowledge.

Finally, the concept of 'home' provides a useful theoretical bridge between technical shelter provision and long-term recovery. The underlying research shows that households actively personalise, modify and appropriate spaces in order to recreate familiarity and identity. This suggests that a successful temporary housing system should create opportunities for home-making rather than delivering an immutable object. Flexibility is therefore not merely an architectural convenience; it can be a mechanism through which displaced households regain agency.

RESEARCH AGENDA

Develop comparative indicators for cultural adequacy at site, settlement and dwelling scales.

Combine life-cycle assessment with social and economic indicators so that temporary housing options can be compared on whole-life value rather than procurement cost alone.

Measure actual patterns of household adaptation to determine which flexible strategies are used, modified or rejected.

Develop decision-support tools that align operational, managerial and strategic housing decisions.

Conduct longitudinal post-occupancy studies tracking households from emergency shelter through temporary accommodation and permanent recovery.

Investigate rental, hosting and dispersed accommodation as alternatives to purpose-built temporary settlements in land-constrained urban areas.

Develop pre-disaster preparedness systems for local materials, construction skills, household profiles and participatory decision-making.

Evaluate after-use outcomes of temporary units, including relocation, reuse, upgrading, recycling and abandonment.

LIMITATIONS

This paper is a critical/conceptual review and does not report a new household dataset, meta-analysis or statistical effect-size synthesis. The comparative examples are drawn from the literature and from the shelter and design material developed in the underlying research. Consequently, the proposed framework should be understood as a theoretically grounded synthesis requiring empirical validation.

CONCLUSIONS

Post-disaster temporary housing should be understood as a recovery infrastructure rather than a disposable shelter product. The literature and the underlying research demonstrate recurring problems when temporary housing is planned primarily around rapid delivery, standardisation and initial cost. These problems include cultural mismatch, weak livelihood connectivity, environmental burden, hidden economic costs, limited adaptability and uncertainty about what happens when the temporary period ends.

The review proposes a transition-oriented approach in which temporary accommodation is selected as one element of a broader recovery pathway. The approach begins with context and household assessment, moves through pathway and site selection, supports adaptable implementation and participation, and concludes with explicit transition and after-use planning. Within this model, safety remains non-negotiable, but safety is complemented by dignity, cultural adequacy, sustainability, affordability, adaptability and continuity.

The principal contribution is therefore a reframing of temporary housing from 'units delivered' to 'future options preserved'. A successful temporary housing intervention should allow households to live safely and with dignity today while keeping open realistic possibilities for adaptation, upgrading, relocation, reuse and permanent recovery tomorrow.



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