



TranShel

by World Shelters

**Transitional Shelter: *Efficient Structures
Enabling Localizations to Recovery***



Proposal for Médecins Sans Frontières

World Shelters is an NGO - US non-profit 501(c)(3)
550 South G St., Suite 3, Arcata, CA 95521 USA phone +1 707 822 6600 * fax +1 707 633 1737
www.worldshelters.org info@worldshelters.org

Contents:

Executive Summary	3
TranShel in the Context of Transitional Shelter	4
The TranShel by World Shelters: Attributes, Cost and Specifications	7
Proposal Guidance: Deployment and Localizations	9
International Agency Context for Transitional Shelter:	9
Following Deployment of Transitional Shelter: TranShel In-Country Additive Construction and Adaptations Cost Estimates:	10
Possible In-Country Project Scope Outline for Transition to Permanence:	11
World Shelters Background:	13



Executive Summary

In support of MSF program goals to provide improved shelter for patients discharged from MSF field hospitals, and for other MSF shelter requirements, World Shelters proposes a transitional shelter approach that meets the immediate need for shelter and aligns with local economic development and sustainable solutions.

In order to implement humanitarian projects with goals that go beyond immediate short term needs, programming can prioritize longer-term needs and issues. To effectively contribute towards “recovery”, we can direct our goals and objectives for relief efforts into investments towards permanent development - of housing, of neighborhoods and communities, of the local economy – in favor of the health and well-being of individuals and families.

Enabling individuals and families to improve their condition from “survival mode” to “productivity mode” is a key benefit provided by transitional shelter. Safe, secure, healthy shelter is a foundation for individuals and families to become productive contributors to their recovering community. The recipients of relief can become the providers of relief.

MSF’s proposed shelter construction activities present an opportunity to address both the needs for immediate transitional shelter, and to catalyze local economic development activities. The high cost of relief material, logistics and personnel support following natural disasters and conflicts necessitates maximizing the long-term value of these investments. Project budgets can create assets, not just absorb expenses. As recovery includes both creation of permanent housing and sustainable economic development, transitional shelter offers effective means towards both of these goals.

World Shelters proposes a transitional shelter program that includes a self-contained structural system, the “TranShel”, that can be readily handed over at the appropriate time to an agency that will provide further in-country programming with capital allocations. This combination of delivered assets and local processes can provide a “core house” that individuals and communities can adapt and expand using local materials and labor. We suggest that the in-country programming and capital to facilitate these localization processes, i.e. the agency partner and resources for further work in the transition to permanent housing, merits including in considerations as an integral element of MSF’s transitional shelter programs.

World Shelters’ TranShel was developed at the request of the relief agencies’ shelter program managers acting as the Transitional Shelter Consortium. The TranShel effectively conforms to the “Transitional Shelter Standards” drafted by the Consortium. The proposed version has a rectangular footprint of 6m x 3m, providing 18 m² of clear-span space in a structure that also meets Sphere standards for a family of five and exceeds the strength requirements of both standards. Expanding beyond the Consortium’s draft Transitional Shelter Standards, other sizes, shapes, strengths and climatic attributes are deliverable by means of World Shelters’ frameless hard-panel

structure paradigm. If MSF would prefer a different size or shape, e.g. 20 m2 vs 18 m2, or capable of supporting heavy snow loads, World Shelters can engineer that structure to your specifications under a very economical contract. An estimate of the change in the total cost per shelter can be provided in advance of the detailed engineering, based on anticipated revisions.

TranShel production capacity is currently located in southern California and can produce 100 shelters per day, with increases in production volume readily achievable. 75 TranShels fill a standard ocean freight shipping container. TranShels can be hand-carried to their assembly site by the assembly team of four.

This proposal includes pricing for shelters, and also suggestions for in-country programming. In-country program budgets are context sensitive, requiring assessment before planning and budgeting.

World Shelters is prepared to be of service as needed, in production, distribution and deployment of transitional shelters in support of MSF projects anywhere in the world. We hope that such projects can include community recovery with local economic development attained in part through our initiatives towards growing localized permanent housing from the seed of transitional shelter.

Bruce LeBel

Executive Director

World Shelters

+1 707 822 6600 office

+1 707 845 5654 mobile

+1 707 633 1737 fax

bruce.lebel@worldshelters.org

www.worldshelters.org

a US 501(c)(3) non-profit NGO

supporting established agencies' assessed needs for shelter



TranShel in the Context of Transitional Shelter

Overwhelming shortages of shelter and other basic human needs follow in the wake of natural disasters and military conflicts. Historically, relief agencies focused on initial responses to meet immediate needs and have typically not addressed mid- to long-term recovery in the affected regions. This emphasis on short-term response is now changing as agencies are realizing that expensive post-disaster material support often has little to no use in the context of long-term recovery. Temporary shelters, such as tents, only provide temporary solutions. While tents often have the benefit of small size and rapid deployment, they cannot be used in the transition to long-term housing solutions. This results in high foreign investment with little local return. Agencies are now placing greater emphasis on immediate post-disaster material provisioning that has a direct role in the long-term recovery of affected communities and regions.

Relief agency recognition that the goal is “recovery” establishes the imperative that relief materials for shelter needs serve as a precursor and integral element of a permanent house. It is now fair to say that the relief agencies do not want to deploy tents, or even the ubiquitous plastic sheeting. They deploy them because of a lack of alternatives and limited resources. The Transitional Shelter Consortium, created by relief agency shelter program managers, is addressing issues regarding deliverable relief materials that can become integral components of permanent housing.



World Shelters developed the TranShel at the invitation of the Transitional Shelter Consortium and Shelter Centre. The TranShel substantially conforms to the draft Transitional Shelter Standards written by the Consortium. From conception, the TranShel design is geared towards creating transitional shelter that accelerates an affected region's long-term housing reconstruction. TranShel is a transitional shelter with the ability to become the starting point for constructing the permanent house utilizing local materials. It encompasses recovery, local adaptability, and sustainability. The following PowerPoint document provides summary information:



(Double-click on the above icon to open the TranShel Summary.ppt)

Local labor and local materials are integral in the transition of TranShel shelters to permanent housing. By partnering with established local agencies and local governments and stakeholders, appropriate project processes and materials can be defined. These include, for example, localized management and distribution of capital for local construction in the form of local grants or micro-loans, recruitment of local personnel for program management, engaging local architects and contractors, and creation of semi-skilled labor through on-site training. The goal is to shift the long term management of the permanent housing adaptations of TranShel, and related construction projects to local organizations and individuals, and to thereby create more effective projects with a maximum level of community ownership. This process illustrates how the TranShel and the transitional shelter paradigm can be more than a shelter but also a source of job creation and economic growth towards community recovery.

The TranShel by World Shelters: Attributes, Cost and Specifications

The TranShel provides an initial structure that is self-contained, enables immediate shelter, provides safety and security, conforms to Sphere standards, and can serve as a “core house”. Capable of incorporating local materials and with adaptations to permanent housing financed through field programming capital, TranShel can provide shelter beyond the initial relief phase of a response project, and on to permanence.

The TranShel provides 18m² for a family of five in accordance with Sphere standards. The rectangular floor plan is 6m x 3m, with a clear wall height of 1.8m without obstructing columns or other internal supports. Light-weight for easy transport, this transitional shelter is a frameless hard-panel structure with a roof section that can be positioned on walls of any construction. The versatility of this structure allows integration of local materials for walls and ceilings, as well as the replacement of TranShel sections with permanent construction appropriate for local conditions.

TranShel panels are flame retardant, UV-resistant and recyclable. In tests performed by a certified laboratory the flame retardant properties of our panel material have been empirically proven. The UV-resistance is formulated for 10-year anticipated life at tropical exposures. If the TranShel is painted such that UV is blocked, the panel material lifetime is significantly increased. World Shelters can recommend paint specifications. Painting is best performed in the field following assembly. Paint materials are included in the product cost. Both painted and unpainted panels can be recycled.

One semi-skilled person with three helpers can assemble a TranShel. All necessary tools are shipped with sets of structures. Iconic markings on each panel edge (along with accompanying graphic instructions) provide assembly information while avoiding language and literacy barriers. The TranShel box is 0.9 m³, weighing 85 kg, and includes handles for ease of transport.

The quoted configuration includes:

- One door
- Two opening windows with insect screens
- Six panel vents
- Solar 25w powered roof fan/vent, fully self-contained (in order quantities greater than 75)
- Panels made from non-corroding, flame-retardant, UV resistant materials
- Heavy gauge tarp floor, pan configured.
- Additional features and attributes can be engineered into the TranShel per MSF requirements

Cost:

(Removed from this version. For cost information, contact World Shelters)

Shipping:

FOB: Factory (Southern California for shipment through Port of Long Beach, CA, USA).

Weight of each TranShel complete is 85 kg. Packaging total volume per TranShel is .9 cubic meter.

75 TranShels can be shipped in each standard ocean freight cargo container. TranShels are designed to be logistically efficient.

Assembly:

On a prepared site, assembly of the TranShel from package to completion requires approximately 16 hours. Assembly is best performed by teams of four, with one trained lead and three helpers. Each team of four can build two TranShel housing units per day.

Engineering Analysis:

Please see the embedded file “Eng Review TranShel.pdf” below for the detailed engineering analysis.



Eng Review
TranShel.pdf

(Double-click the icon above to open the file.)

Manufacturing Capabilities:

World Shelters works with manufacturing partners that have existing capacity to produce TranShels rapidly and in quantities that exceed the current requirement of 5,000 shelters. Numatech West in Pomona, CA, USA performs the toolmaking, die-cutting, sonic welding and final packaging of the TranShels. The panel resin formulation combining both FR and UV high-performance attributes is proprietary and non-transferrable. Note: If global manufacturing is advantageous, additional materials suppliers and production facilities can be arranged, e.g. in Chile, China and/or India.

Adaptable Design:

The TranShel design paradigm can be adapted to various shapes, sizes, and strengths for frameless hard-panel transitional shelters, designed to meet the architectural vernacular of each locale as closely as possible, as well as to meet local climatic requirements. Examples include: a round floor plan with conical roof for Mozambique, an open wall “fale” style structure for the South Pacific (see image above), or a shelter with a window on either side of the door for Guatemala (where the door as “house mouth” needs the windows as the eyes). Engineering modifications can achieve increased wind loads, snow loads, insulation, and other winterization attributes. Supported and insulated floors can be provided. A versatile line of design options provides the most culturally and climatically appropriate transitional shelter at a low cost.

Proposal Guidance: Deployment and Localizations

In advance of delivery of foreign shelter materials, there are two main factors that should be realized to facilitate success. First, and most important, local assessment must be the first step in project planning. Secondly, field programming should budget to maximize utilization of local resources, including both personnel and materials. Prior to implementing any project, especially disaster response, it is important to conduct a thorough assessment of the local situation, including: local resources, personnel (skilled and semi-skilled), local NGOs, parcel zoning and title, building codes, and other factors. If transitional shelter can be achieved using only local materials and labor, then the investment should be entirely local, and foreign-built shelters should not be delivered. If the foreign-built shelters, e.g. TranShels, can meet an otherwise unmet need as an immediate “core house” providing healthy, safe and secure shelter for families, then the provision of foreign-built delivered shelters can serve as a significant asset for the recipient families and communities.

In parallel with shelter delivery, allocation of appropriate capital for localized construction is necessary to support the transitional goals of the project, including capital for:

- Recruitment of local personnel for program management and in-country staff, including local architects and contractors
- Training local personnel
- Purchasing local materials
- Partnering with local governments and NGOs to determine appropriate means for management and distribution of capital for local construction (i.e. local grants or micro-loans for adaptations of the TranShel)
- Localizations such as modifications with local materials, and latrines for each family shelter, are achievable initially through field programming capital.
- Organization infrastructure to assure the sustainability of the local capacity for ongoing transitions to permanent housing

Each project plan and budget will be unique to the context. Assessment and utilization of local resources works towards two goals: adapting shelter implementation to identified needs, and stimulating local economic growth. World Shelters’ “TranShel” transitional shelter and assessment-based project implementation engenders locally appropriate and sustainable community recovery.

International Agency Context for Transitional Shelter:

“If we are talking about Recovery, then the focus has to be toward the ‘Permanent House’ or we are not dealing with Recovery.”

– LeGrand Malany* to Shelter Meeting 09B, Nov 2009, Geneva, CH.

Integral to the concept of promoting transitional shelter, Mr. Malany elaborated further, noting that a localized transitional shelter project can:

1. Help to kick start recovery – economic development attributes include capital for local materials and labor
2. Accelerate re-integration into the country's incremental housing development
3. Provide a non-tent structure that is a part of the forthcoming permanent house
4. Set the stage for the characteristics of the permanent house
5. Set the tone for the generalized recovery

(* Lee Malany is a private contractor serving as strategic shelter resource to USAID Office of Foreign Disaster Assistance and to various NGO's. In this presentation at Shelter Meeting 09B in Geneva, Lee defined the transitional shelter context in general, emphasizing local construction, and not promoting any particular solution.)

Further information on international agencies' principles and practices regarding transitional shelter is available at the Shelter Centre website www.sheltercentre.org.

Following Deployment of Transitional Shelter: TranShel In-Country Additive Construction and Adaptations Cost Estimates:

Incorporating capital for local adaptations and constructed extensions is an important element to consider for transitional shelter programming, and contributes to local economic development and sustainable recovery. While every situation requires a separate assessment, the following is an estimated budget per project, in addition to the above shelter costs:

1. Local materials: \$200-600 per family
2. Local labor: \$100-400 per transitional shelter (for adaptations toward transition to permanent house)
3. Training: Determined by project scope; estimate \$25 per shelter delivered for a 500 shelter project

Project team costs are also a required element of these projects. The initial project assessment and implementation plan can be estimated at \$15 per shelter, plus travel and 20 days per diem per 500 shelter project. Following assessment a project budget can be more precisely defined. An estimated amount for a two-person (program manager and shelter technician) project team to implement a 500 shelter transitional shelter project and see it through to local agency hand-off is \$50 per shelter, (\$25,000) plus travel and 75 days per diem.

Possible In-Country Project Scope Outline for Transition to Permanence:

In-country project goals cover two main themes.

1. Initial provision of shelter, and
2. Integration with local agencies for management and distribution of capital, procurement of materials and labor, and to facilitate transitional construction.

Facilitating the creation of each family's permanent house, utilizing the TranShel as a core element, also promotes local economic development

To accomplish these goals we must realize several sets of objectives:

- Partnerships with local governments, NGOs
- Recruitment of local personnel
- Training
- Resolution of land title
- Determining local land zoning and building codes
- Adapting materials and designs to conform with local requirements
 - Local codes
 - Architectural elements
 - Existing structures following disaster
 - Local materials
 - Local building trades availability
 - Semi-skilled labor availability
 - Local capital/in-kind local contribution and leverage
 - Other international funding
 - Integration with Emergency Shelter Cluster and the Early Recovery Cluster

The following is meant as a reference that details many of the likely project elements:

- Transitional Shelter Project Elements: typical, reference only
 - Assessment
 - Define project scope and attributes
 - Define performance measurements and quality control points for each project element
 - Confirm budget
 - Invoke project
 - Establish local coordination
 - Establish local team and staff
 - Determine local construction material availability
 - Establish local skilled and semi-skilled labor teams

- Determine design adaptations with local group process including representative local stakeholders
- Assemble pilot transitional shelters including local adaptations if possible
- Critique and modify designs
- Second phase pilot
- Repeat critiquing and modification until local stakeholders are satisfied
- Determine locations for demonstration projects
- Build initial quantities in neighborhood clusters in local demonstrations
- Scale up assembly and construction as rapidly as possible
- Local capital provision to an appropriate local scale (family, community, village, local government)
 - Implement distribution of local construction using local materials and labor
 - Establish local ownership transfer of project (i.e scaling back our management and moving towards eventual full local management)
- Individual project assessment, plan, and budget will determine further steps

World Shelters Background:

A recognized world leader in developing innovative and proven designs for providing low-cost emergency and transitional shelters, World Shelters won international shelter competitions organized by USAID and OFDA in 1986 and 1999-2000. Upon invitation from Shelter Centre and the Transitional Shelter Consortium, World Shelters developed the TranShel and demonstrated it at the Transitional Shelter Meeting in May 2009 in Geneva, Switzerland.

World Shelters' U-Dome was featured at an architecture and design expose at the world-famous Triennale Museum of Architecture and Design in Milan, Italy, through the summer of 2008, in the exhibit "Una Casa per Tutti", A House for All. In the panel discussion of featured presenters, the curator of the exhibit exclaimed: "It is said that 'Architecture is too important to leave to architects.' Bruce LeBel and World Shelters demonstrate the truth of that aphorism."

World Shelters emergency and transitional shelters are deployed worldwide. The following are just a few examples of their applications:



Following the disastrous tsunami in 2004, World Shelters raised funds to provide shelters to International Medical Corps for use in Sri Lanka as portable medical clinics. Additional shelters were provided towards rebuilding of a village in Galle, Sri Lanka, in Banda Aceh, Indonesia and in India including the Andaman Islands.

In response to Hurricane Katrina, World Shelters fielded teams of 60 personnel over a 60-day period, producing Q-Shelters at our field fabrication center deployed in Mississippi. The Q-Shelters were used for public agency and private purposes, in support of the Emergency Operations Management teams in Harrison and Hancock Counties.



In 2004, International Medical Corps deployed portable medical clinics in Uganda using World Shelters Q-Shelter.



In response to the Yogyakarta Indonesia earthquake in 2006, World Shelter supported the collaborative response effort of the Emergency Shelter Cluster chaired by the IFRC. In Jogja WS demonstrated and deployed field assembly operations for converting relief sheeting into self-supporting shelters using local materials and World Shelters' Clip Kits.



U-Dome195's and U-Dome110's at River Haven transitional shelter community, Ventura, CA



U-Dome110 at River Haven transitional shelter community, Ventura, CA

U-Dome110's at the Arcata Night Shelter (for homeless persons), Arcata, CA



Two-Story Transitional Shelter for Haiti:

Following a request for engineering assistance from USAID/OFDA, World Shelters designed and developed the first two-story transitional shelter. The initial intended purpose was for urban Haiti, where many parcels of land are too small for the footprint of a typical transitional shelter. Please see the “TShel2 summary.pdf” document embedded below. The TShel2 demonstration model was effectively deployed at the Delmas 33 camp outside Port-au-Prince.



TShel2 summary.pdf

Structural engineering analysis for the TShel2 is also available in the embedded file below “TShel2 Eng Review 2010-11.pdf”.



TShel2 eng
review-2010-11.pdf

(Double-click the icons above to open the files.)

World Shelters response following the earthquake and tsunamis in Japan, January 2011:

Please open the embedded file below “2DK TShel2 Japan 201105.pdf” to see a summary of the engineered structure that World Shelters proposed for the Gov’t of Japan, in response to RFP received. Our proposal was highly promoted by the federal Ministry of Land, Infrastructure and Transportation, however for a wide range of reasons the overall program of building 70,000 family housing units from internationally supplied construction kits was stopped prior to implementation.



2DK TShel2 Japan
201105.pdf

(Double-click the icon above to open the file.)

