UNHCR
The UN Refugee Agency

Refugee Housing Unit
Prototype Research & Development

The above illustration shows the **RHU Frame, RHU Panels, RHU PV System and RHU Shade Net,** and their respective packages

A Better Home For Emergency Relief and Beyond

The Refugee Housing Unit (RHU) is an **innovative concept prototype** designed to improve the living conditions of people displaced by natural disasters and conflicts. It is composed of four individual parts – RHU Frame, RHU Panels, RHU PV System and RHU Shade Net. All RHU components can be easily assembled on site. The goal of the prototype is to evaluate it's performance with respect to the personal, social and cultural expectations of the people that it aspires to rehabilitate, the environment that it is designed for, and the critical logistical and financial aspects of a large scale production and deployment, so as to deliver a dignified and viable end product experience.

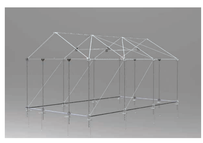
Dimensions	**5,14 m × 3,15 m × 2,74 m**
Area	**17,5 m²**
Height	**3,14 m**
5 people/unit	**3,5 m²/person (sphere standard)**

Modular design
A modular design makes the RHU a viable solution in the most variable contexts. The basic RHU Frame together with plastic sheeting creates a temporary shelter with the option to upgrade with local building materials or pre-manufactured RHU Panels, RHU Photovoltaic and/or an RHU Shade Net.

Better living comfort
The design of the RHU was derived using the regulated European building codes. As a consequence, it provides a high standard of living comfort and safety. The spatial volume is more than double that of the UNHCR family tent. The combination of the RHU Panels and RHU Shade Net creates a comfortable ambience inside.

Logistics friendly
The RHU is optimised to meet high volume production conditions and flat pack logistic demands required to be cost efficient in the long run. Due to the materials and processes used, manufacturing and packaging of the RHU is suitable for global production.

FRAME



The **RHU Frame** is a modular and expandable self-supported frame designed to be used with RHU Panels, plastic sheeting or locally sourced building materials in order to build an adequate shelter.

Weight	**30-45 kg**
Volume	**0,1 m³**
Assembly	**1 hour / 2 people**
Life span	**10+ years**

PANELS

The **RHU Panels** are modular wall and ceiling panels to be built on to the RHU Frame in order to quickly achieve a complete, durable shelter intended to last up to three years. The Panels can be fitted onto a RHU Frame in any size and be used to build shelters, warehouses, clinics and schools.

Weight	**85 kg**
Volume	**0,8 m³**
Assembly	**3 hours / 2 people**
Life span	**3 years**

PV-SYSTEM

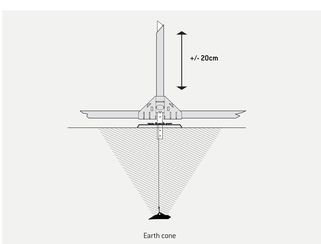
The **RHU Photovoltaic (PV) System** consists of a solar panel and a portable LED light including rechargeable batteries and a USB power outlet. The solar panel can be integrated into the RHU Panel or the RHU Shade Net.

Weight	**0,75 kg**
Volume	**0,01 m³**
Assembly	**0 hour / 2 people**
Life span	**3 years**

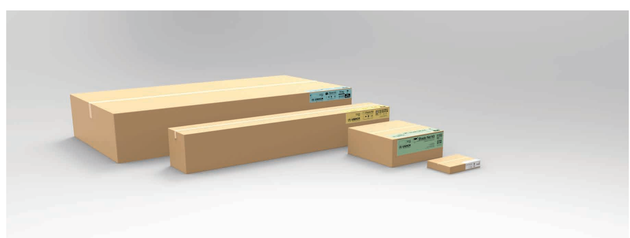
SHADE NET

The **RHU Shade Net** is an external screen, which significantly improves indoor thermal comfort. During the day, the Shade Net's open structure provides 70% solar reflection and cooling. At night and in cold climates, the Shade Net helps reduce radiated heat loss.

Weight	**8 kg**
Volume	**0,02 m³**
Assembly	**1 hours / 2 people**
Life span	**3 years**



The ground anchoring system is designed to fit various ground conditions, from grabble and sand and clay to asphalt. The anchor is height adjustable, which allows the shelter to be built on uneven grounds or in slopes of up to 7 degrees. The concept involves a specially designed anchor which is driven and locked into the ground with a driver — no digging is required to lock it into position.



Packaging of the RHU is done in four separate packages which can be combined or used independently in order to respond to the shifting needs and budgets of relief operations. The total target weight of the shelter is 98 kg and the packing volume is 1.5 cubic meters.

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IKEA FOUNDATION

REFUGEE HOUSING UNIT