

# Refugee Housing Unit – RHU



**THE BACKGROUND:** The Refugee Housing Unit (RHU) is an innovative shelter solution, designed as a result of a Research & Development Project undertaken by the Refugee Housing Unit RHU AB, Sweden, and UNHCR, with the support of the IKEA Foundation. The RHU is composed of several basic elements, including a lightweight steel frame, roof and wall panels, door and windows, floor covering, solar energy system (lamp and telephone charger) and an innovative anchoring system. After extensive field testing of prototype #1 in Iraq and Ethiopia, the project has now developed a production model for volume mobilisation.

**THE PRODUCTION:** UNHCR's engagement with the RHU project makes the decision fundamentally different than a purely "arm's length" transaction to procure a commercially-available shelter solution. The fundamental premise of the RHU project is that no comparable product currently exists on the market. To make the large-scale production of the RHU possible, on 18 July 2014, the UNHCR Committee on Contracts approved a Waiver of Competitive Bidding for the establishment of a Frame Agreement with Refugee Housing Unit RHU AB for the period December 2014 to June 2016 for the purchase of 30,000 Refugee Housing Units at a cost of **\$1,150**, *exclusive of transport and storage*.

An advance commitment (PO) to procure **10,000 RHUs** in 2015 has been made with a schedule for delivery as below:

## DELIVERY SCHEDULE TO GDANSK, POLAND

Date	Delivery # Units	Total Delivery # Units
April 2015	100	100*
May 2015	500	600
June 2015	1,000	1,600
July 2015	2,375	3,975
August 2015	2,500	6,475
September 2015	2,500	8,975
October 2015	1,025	10,000
* Will be used as a calibration batch and for ToT RHU set-up training		

Field operations considering the RHU are encouraged to review the RHU documentation carefully and consult with the Shelter and Settlement Section - DPSM for further information on suitability

**THE DEPLOYMENT:** The volume mobilisation of the RHU will require consideration of specific technical and logistics requirements. The UNHCR Shelter & Settlement Section (SSS) - DPSM can provide technical support and deliver a Trainer of Trainers (ToT) package on RHU assembly to UNHCR and IP staff in the field. This training and support package will include information on assembly times and staffing requirements to assist field operations in designing their programmes.



Package A 1960x1100x240mm (85kg)  
 Package B 1960x1100x240mm (75kg)  
 Pallet dimensions 1960x1100x140mm

40 foot Shipping Container  
 can hold 36 RHU shelters  
 40 foot, high capacity (HC)  
 can hold 48 RHU shelters



≈ 6 hours  
by four trained  
people



**THE DESIGN:** As a complete shelter package manufactured in controlled conditions the RHU represents a predictable, multi-year lifespan, rigid structure shelter solution for PoC.

UNHCR's business case for use of the RHU as an operational shelter solution must take into account the total cost of operation, which will include the price per unit, shipping and storage and the requirements for future maintenance.



Floor area:	<b>17,5m<sup>2</sup></b>	Unit price:	<b>1,150 US\$ exclusive of transport, storage and deployment</b>
Minimum ceiling height:	<b>1840mm</b>	Expected lifespan:	<b>1.5 years - without maintenance</b>
Door:	<b>1 piece (740x1690mm)</b>		<b>3 years - with basic maintenance</b>
Windows:	<b>4 pieces (620cm<sup>2</sup> each)</b>	Sphere compliant:	<b>Yes</b>
Ventilation openings:	<b>2 pieces (800cm<sup>2</sup> each)</b>	Modular:	<b>Yes</b>
Wind speed (frame):	<b>18 m/s (EC1)</b>	PV system:	<b>4h light/day and USB power</b>
Snow loads	<b>10 kg/m<sup>2</sup> (EC1)</b>	Package Weight	<b>160 kg</b>
UV:	<b>2700 UVA</b>	Package Volume	<b>1.07 m<sup>3</sup></b>

**THE NEXT STEPS:** As global availability in 2015 is limited to 10,000 units, it is essential that operations intending to utilize the RHU communicate their funded requirement as early as possible through The Shelter & Settlement Section (SSS) - DPSM. As soon as a confirmed commitment is made

the RHU focal point within SSS will organise the delivery of the ToT with the RHU receiving country and provide additional technical support to the operation. Example of how ToT training can translate into 'on the ground' assembly capacity:



ToT  
Face-to-Face  
Training

**10 participants**  
**4 day training**  
**Physical set-up of 2 RHU units**



**1 Trained**  
**+ 8 labours**

**5 RHU every 2 days**  
**15 RHU every week**  
**65 RHU every month**

**x10**



**10 Trained**  
**+ 80 labours**

**50 RHU every 2 days**  
**150 RHU every week**  
**650 RHU every month**

## EXAMPLES FOR THE SEA TRANSPORT COST:

Origin	Destination	Text	Currency	40' Container (36 units)	Additional cost per Shelter
Gdansk	Mombasa	Freight Cost	USD	2.905,00	80 USD
Gdansk	Douala	Freight Cost	USD	3.323,00	92 USD
Gdansk	Addis Ababa	Freight Cost	USD	5.525,00	153 USD

\*Maximum Cargo Weight 18 ton per container.

## CONTACT INFORMATION:

UNHCR Shelter and Settlement Section  
Division of Programme Support and Management (DPSM)  
94 Rue de Montbrillant – 1202, Geneva,  
Switzerland



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