



EU INNOVATE

**SUSTAINABLE INNOVATION IN ACTION:
THE CASE STUDY “SNAPSHOT” SERIES**

ROCKWOOL

Innovative Shelters to House Refugees



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About EU-InnovatE

Between 2014 and 2016, the EU-InnovatE project investigated the potential of citizen innovation and sustainable entrepreneurship to achieve sustainable lifestyles in Europe by 2050. The following is one of a series of case study “snapshots” illustrating how new enterprises are being created by passionate, visionary individuals to benefit society at large.

The Case of Rockwool: Innovative Shelters to House Refugees

Unprecedented numbers of people have become refugees or are internally displaced as a consequence of conflicts in countries such as Syria, Afghanistan and South Sudan. At the end of 2015, the UN's refugee agency reported that there were over 65 million refugees worldwide.

To provide a housing solution, Rockwool worked with a non-governmental organisation (NGO) to co-create an innovative shelter made from stone wool building material. The shelters provide safety and security for occupants and have superior properties to canvas tents that are often used in refugee camps.

Headquartered in Roskilde, Denmark, Rockwool is an international company that specialises in the production of stone wool building materials. Rockwool's products are made from volcanic rock, which has excellent insulation properties. The material's use in construction contributes to buildings which are energy efficient and fireproof, have good acoustic properties and provide a comfortable indoor climate regardless of outside temperatures. In 2013, the company realised that the attributes of the materials could also be of benefit for temporary housing and would provide a superior alternative to tented accommodation for refugees.

Rockwool's octagonal shelters are formed from push-together flat panels that require no additional fixings. The roof and porch are made from a waterproof material that fits snugly over the stone wool panels. The structures can be locked internally or externally when left unattended, and can be assembled quickly by two people.

Once erected, Rockwool shelters offer occupants security, privacy and protection from the elements. The shelter's modular and uniform construction means that panels can be stacked readily when not in use or when being transported. Should there be no further need for the shelters, the stone wool panels can be recycled or reused in construction – ensuring a low environmental impact throughout manufacture, use and re-purposing.

Collaborative Innovation in Practice

Agreement to collaborate in the development of a temporary shelter as a viable housing solution was made following an informal conversation between the director of Orange Innovation and a Rockwool prototype developer. Orange Innovation is a NGO that supports humanitarian, environmental and cultural initiatives. It is also behind a week-long cultural and music festival that has been taking place in Roskilde, Denmark, each summer for over 40 years.

The collaborators realised that a busy festival scene with thousands of people camped close together would make an ideal environment for testing the shelters in challenging conditions. During two recent festivals, volunteers assembled and occupied over 50 Rockwool shelters with the stipulation that they completed questionnaires about the suitability of the shelters and gave suggestions for improvements. Orange Innovation collected and collated the feedback, which enabled Rockwool to incorporate suggestions into the shelter's final form.

Orange Innovation's experience in engaging and facilitating end users in projects, plus its familiarity with gathering user feedback and analysis, was complemented by Rockwool's manufacturing and construction expertise. The collaboration between a NGO and an international company has resulted in the development of a product that could significantly improve the living conditions of people who become homeless. Orange Innovation's close involvement and support in the development of the shelters underlined the value of collaborative working to Rockwool and helped change corporate attitudes towards 'open innovation', new product confidentiality and engaging with end users.

Summary of User-Driven Innovation

- Rockwool developed the shelters following a conversation with the director of a NGO that undertakes sustainable social projects involving stakeholders and end users.
- Orange Innovation identified a need for temporary housing that would have low environmental impact; Rockwool provided the materials and technical know-how to devise a viable solution.
- Rockwool was persuaded to trial shelter prototypes at a busy public event despite company reservations about patent confidentiality.
- Festival goers' feedback helped develop and modify the design of shelters.
- Orange Innovation's experience of working with volunteers and gathering feedback informed the shelter's development.
- Working with Orange Innovation contributed to Rockwool engaging with end users in product development.

Influence on Core Business

Collaboration between Rockwool and Orange Innovation resulted in the creation of a temporary shelter that is a new product line for the company. It could be deployed widely for people who are displaced from their homes through conflict or natural disaster – addressing a crucial worldwide social need and creating a new business area for the company.

Realising the value of end user involvement, facilitated by a NGO, led Rockwool to adopt this business approach in the design and testing of other temporary structures. Collection and analysis of feedback data by the NGO was used instead of engaging a consumer-research agency.

Cross-Sector Relevance: Top Three Insights

- Social and environmental objectives can be achieved when commercial and non-profit organisations work together openly in creating innovative products and/or services.
- Use of unconventional test sites and circumstances can offer unexpected end user feedback and ideas during product development.
- NGOs and research institutions can play an important role in facilitating access to, and collection of, end user insights – to the benefit of a commercial organisation.

To Learn More About the Case...

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Further Information

Rockwool International: www.rockwool.com

Orange Innovation: www.orangemakerspace.com

<https://vimeo.com/orangeinnovation>

Roskilde Festival: www.roskilde-festival.dk

Aalto University: www.aalto.fi