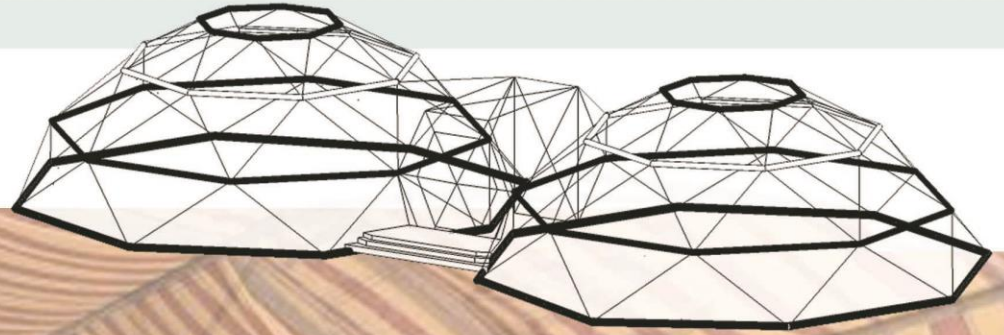


Temporary Shelter



30 th May, 2015

Temporary Shelter

Name of participants

University

30 th May, 2015

Introduction

Historical experiences indicate that natural disasters disturb human life. Lose shelter is one of the most crucial issue after catastrophe. It faced community with several problems such as Lack of safety and security. On the other hand it can be exacerbated when the speed of installation is low and process of cultural adaptation is overlooked. In this regard, providing proper Solutions for temporary accommodation is an essential in disaster-prone areas especially before disaster. Therefore, the process of temporary shelter design and recognize its relevant aspects should be considered in affected community. Design option proposed and its benefits examined in different climate in Iran. It is also adaptable to Iranian culture and easy to install for all affected community.



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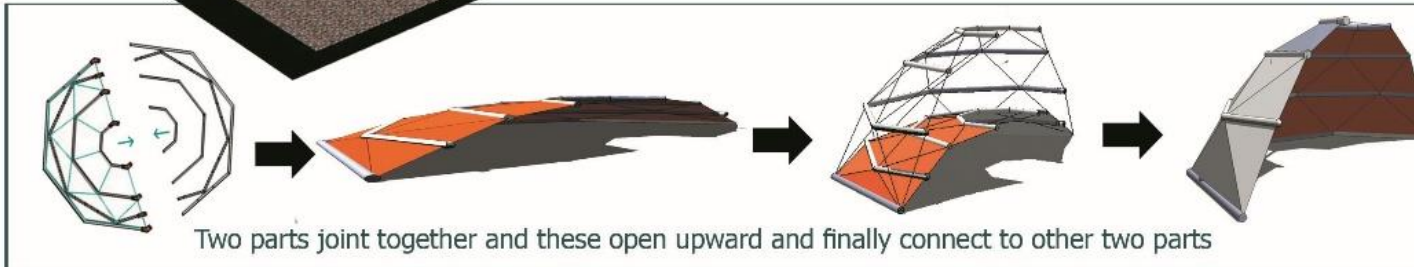
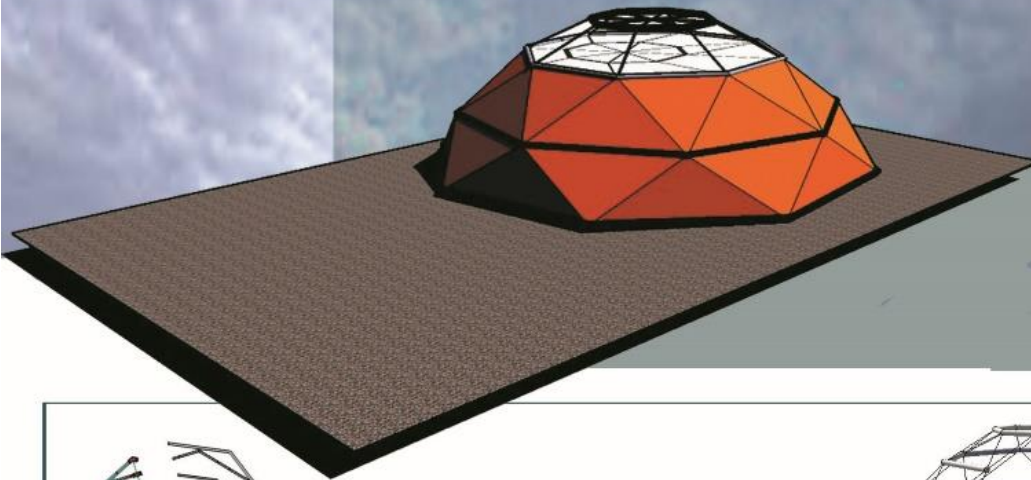
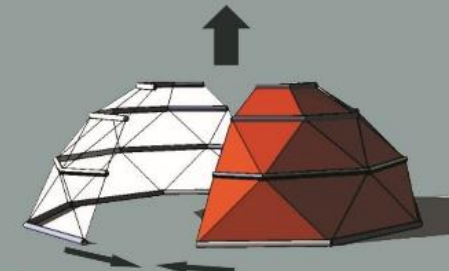
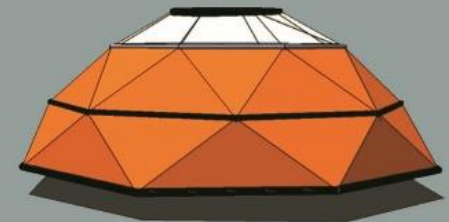
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Temporary shelter feature for design	Advantage of this feature
Portable	easy installation, easy assemblies and separation and reuse capability
Lightweight material	Portable feature, rapidly deployable, easy for transportable
Prefabricated structures	Easy installation, variability in the environment, speed of construction
Modular temporary housing system	Ability to different development
Use of solar panel	Generate enough energy at power supply disruption time after disaster
Temporary house unit Arrangement in site	Consideration of site configuration the land geometry, ground slope, orientation and type of climate e.g. in every area

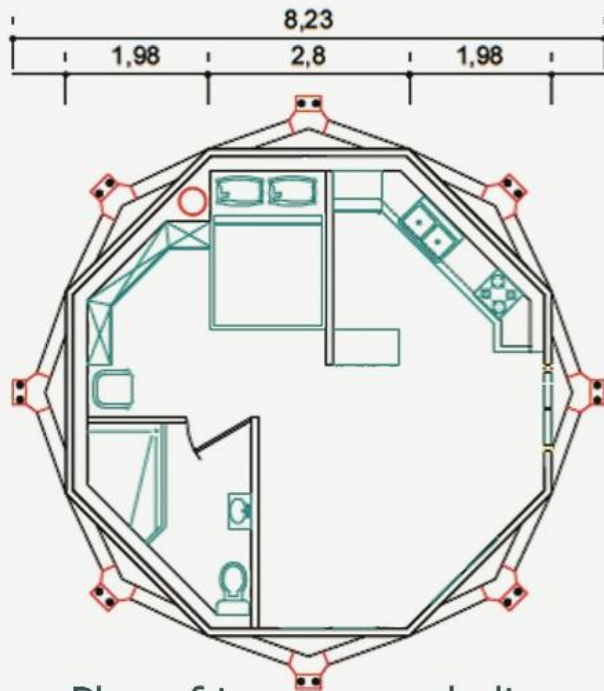
Temporary shelter is designed in terms of findings that are extracted from literature. The module of this temporary shelter is built formed as a hexagonal geometry and it is made of steel rings. The 4 steel rings are rotated 45 degrees overhand. Every two steel rings connected to each other by triangular shaped panels. Triangular panels created in this form can also be prefabricated off-site and be transmitted to the affected area. The advantage of Triangular panels like trusses are reinforcement and structure stabilizing against forces. 3 rings of structure are allocated to survivors living area. Space between latter rings is used for storage and HVAC system location.



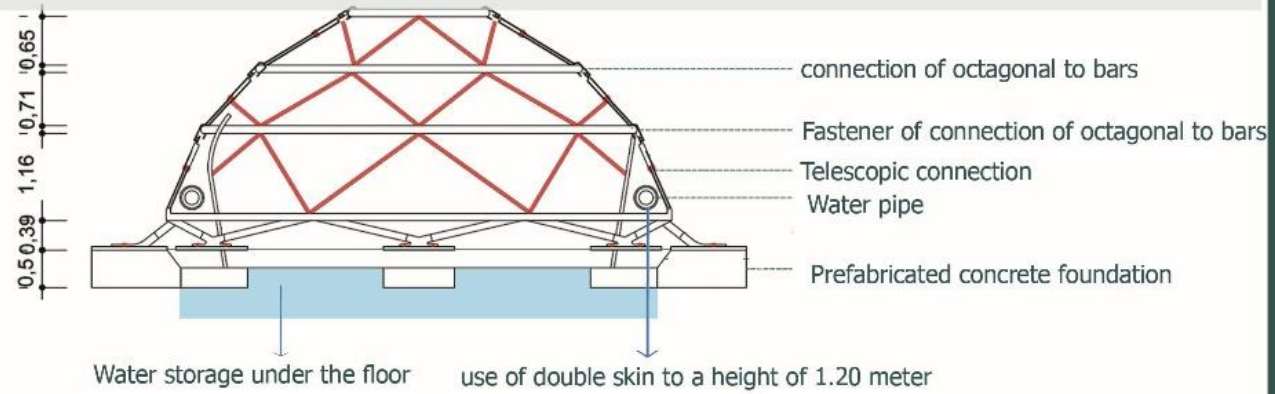
Two parts joint together and these open upward and finally connect to other two parts

Temporary Shelter

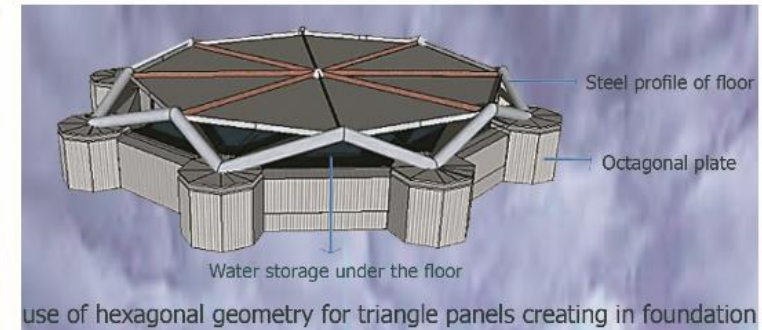
Plan & Section



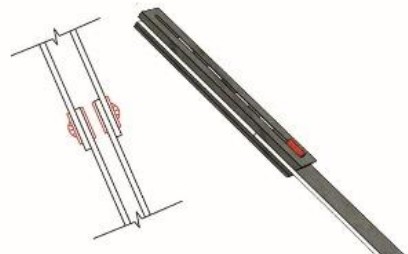
Plan of temporary shelter



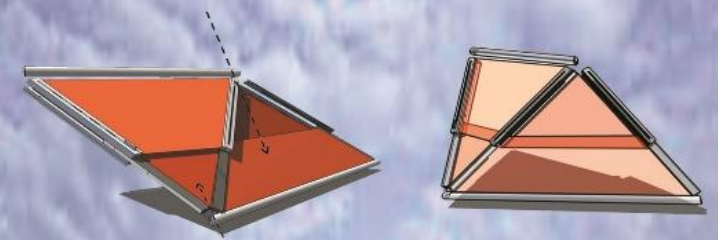
select of light material can help to easy installation and transfer. So the exterior walls and roof is made of pvc panels that are lighter than other material and Cladding facades with PVC panels don't require any maintenance or painting for many years, hence this material can be used for disasters that occur in future.



connection of octagonal to bars



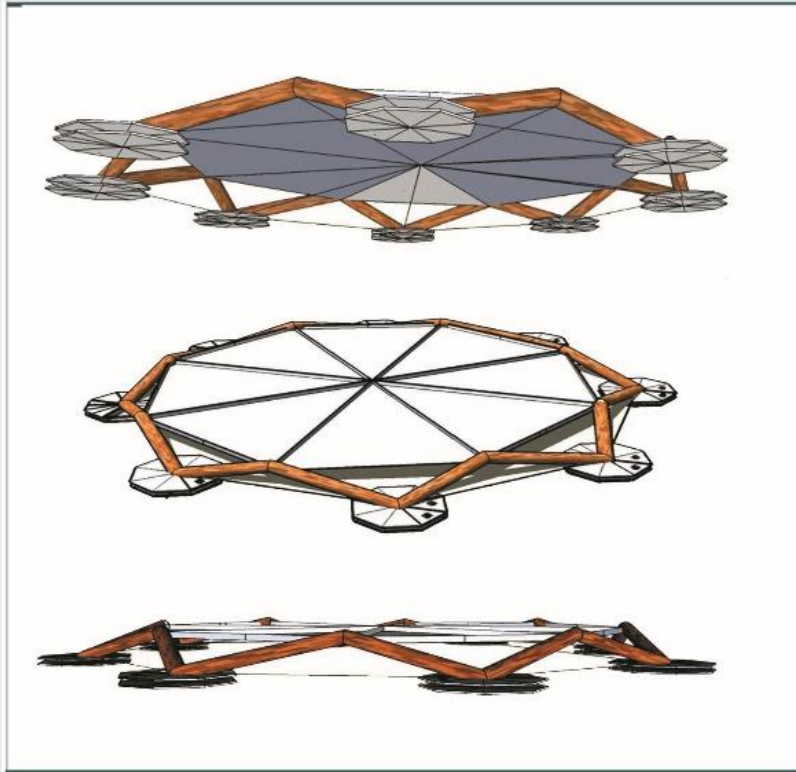
Telescopic connection



Modular panel with telescopic connection

Temporary Shelter

Foundation & Interior



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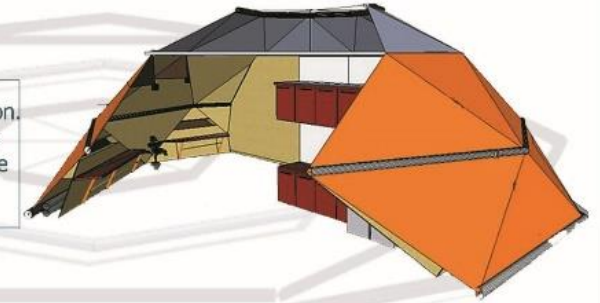
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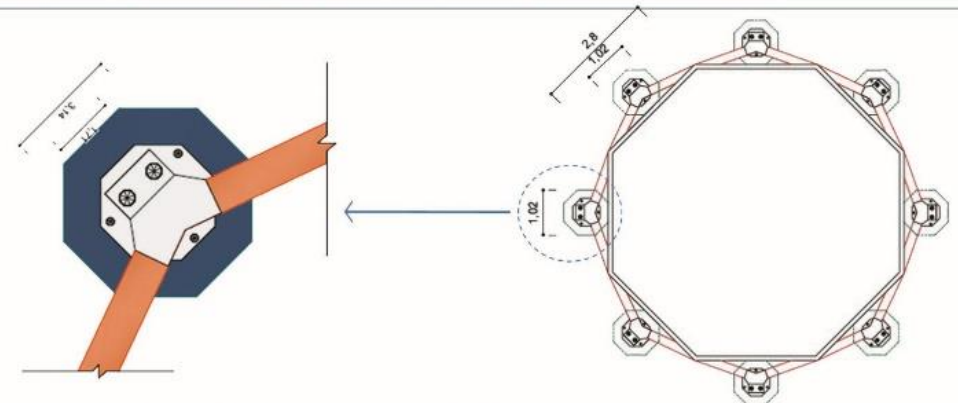
Interior

In this design, furniture provides ease of installation. It is located on the panels and opens easily, so this furniture is designed to be adaptable. The furniture in the living room can be closed when not used.



Connection bars to foundation

In this design, ground structure be made of steel profile that be filled of wood material parts. The interior flooring cladding of the house unit is laminate that easily can be maintained. Flooring force be passed through Steel profile flooring and transmitted to octagonal plate on the ground base for transfer to precast concrete box underground. A water tank is located bottom of ground level. This tank supply rain water. The rain water by pipes transfer to overall water supply, then The water is filtered and comeback to shelters.

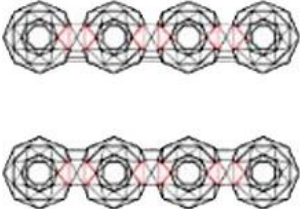
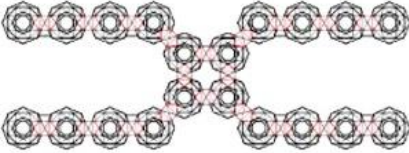
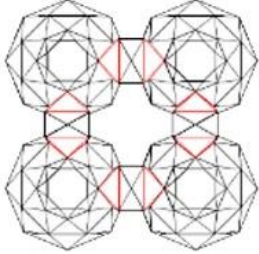
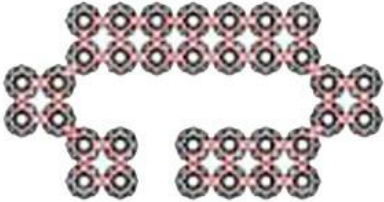


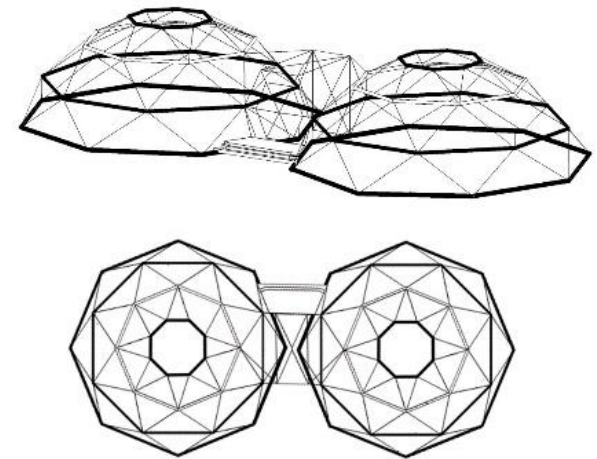
Temporary Shelter

Urban scale

Temporary House Unit Deployment

The Temporary house unit arrangement, one of the factors should be considered for accommodation people after disaster in the site. As be described above, the designed unit has a hexagonal shape. Expanding of 8 directs is possible by this geometry choice. The modules has been selected in this project can be expanded in different forms for variety climate. In very cold and warm weather this module has been expanded as compact form and temporary units in humid and normal weather can be placed far apart together in the site.

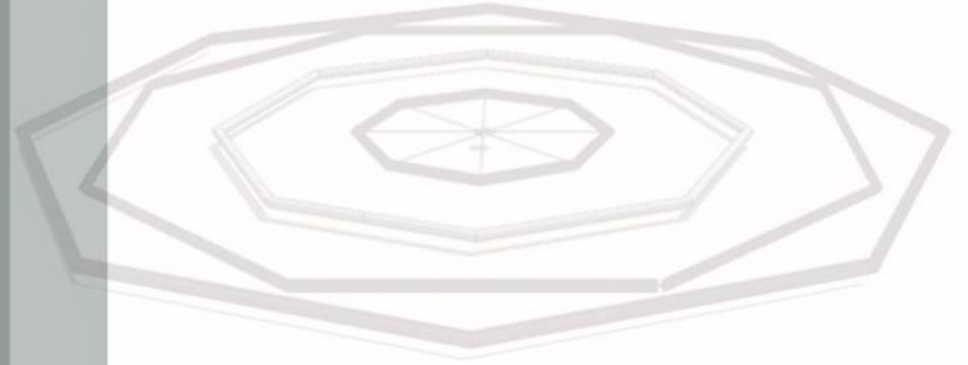
Climate	Module	Extension
Humid and normal climate		
Very cold and warm climate		



Temporary Shelter

Conclusion

We should help to remaining people after disaster to continue their live as before the accident normally. Temporary shelter unit is better to be easy for transformation and installation in on-site. In according to, light weight material was found to be a significant element in temporary housing. Opening ability can help to accelerate for remaining people accommodation after disaster, hence this feature are used in conceptual design. In its design, how extension for many affected people should be considered after disaster. In this design, select of octagonal form is better solution to make temporary unit, because this choice can make triangle panel. These are prefabricated for easy installation and high strength due to constant geometry of triangles. In addition, this form has ability to develop in different directions, so can be used in variety areas.



architecture for disaster reduction and reconstruction,
7th i-Rec student competition

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