



Design out the box



Emergency Shelter

Context

The world has recently witnessed a number of natural disasters that has deprived people of shelter for long periods of time.

Tropical Cyclone:

Effects: Tropical cyclones out at sea cause large waves, heavy rain, and high winds, disrupting international shipping and, at times, causing shipwrecks. On land, strong winds can damage or destroy vehicles, buildings, bridges, and other outside objects, turning loose debris into deadly flying projectiles. The storm surge, or the increase in sea level due to the cyclone, is typically the worst effect from land falling tropical cyclones, historically resulting in 90% of tropical cyclone deaths.

Locations: Tropics



Earthquake:

Effects: Shaking and ground rupture are the main effects created by earthquakes, principally resulting in more or less severe damage to buildings and other rigid structures. Earthquakes can also cause landslides, avalanches, fires, tsunamis and floods. This can lead on to water contamination, reduced or no communications and unstable environment. Especially with tsunamis the landscape can be completely unrecognizable due to the destruction caused by the wave.

Locations: Plate boundaries.

Floods:

Effects: Physical damage - Can damage any type of structure, including bridges, cars, buildings, sewerage systems, roadways, and canals. Water supplies - Contamination of water. Clean drinking water becomes scarce. Diseases - Unhygienic conditions. Spread of water-borne diseases. Crops and food supplies - Shortage of food crops can be caused due to loss of entire harvest. Transport - Transport links destroyed, so hard to get emergency aid to those who need it.

Locations: Areas near water or low lands.





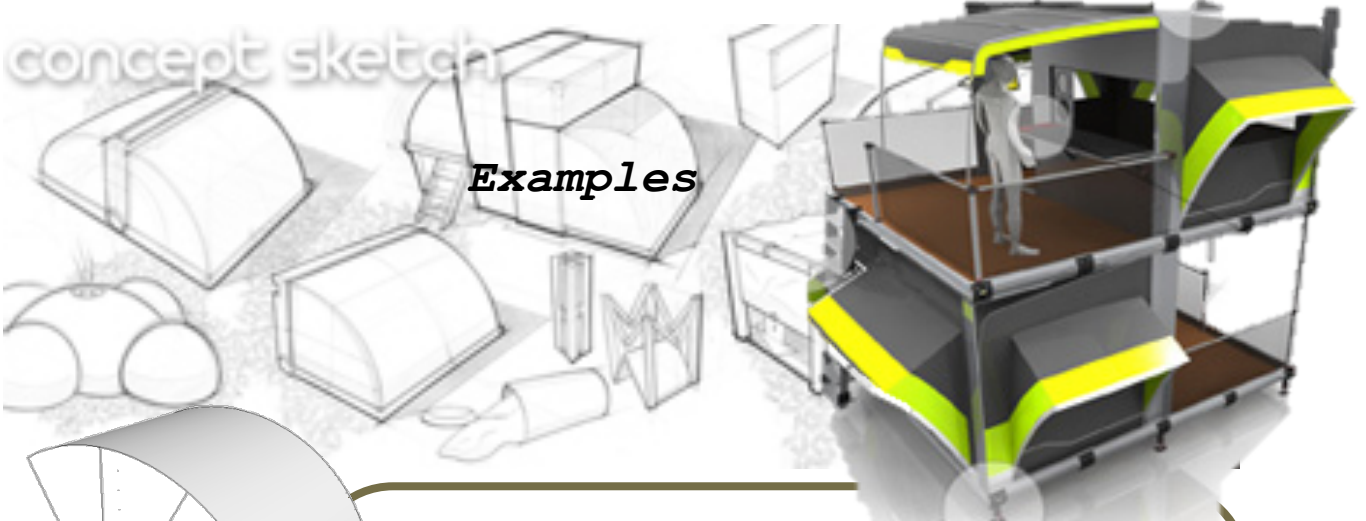
Emergency Shelter

Task

Design an easily transported, erected, and insulated shelter system that could support a family, and provide temporary living accommodation to be deployed in a potential disaster zone.

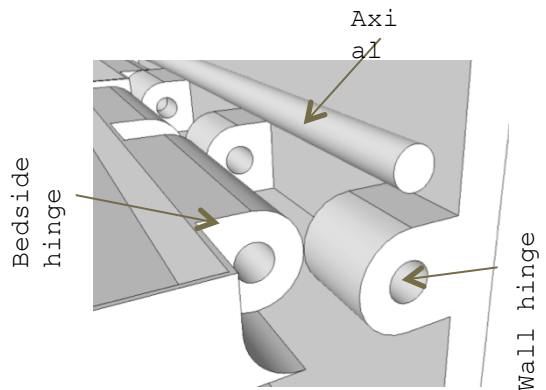
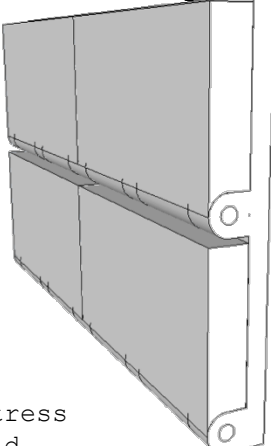
concept sketch

Examples



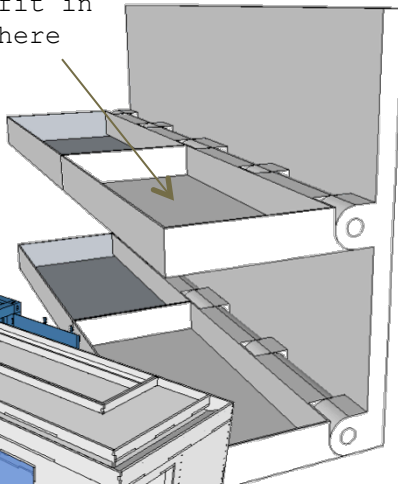
Sleeping system

Folded away

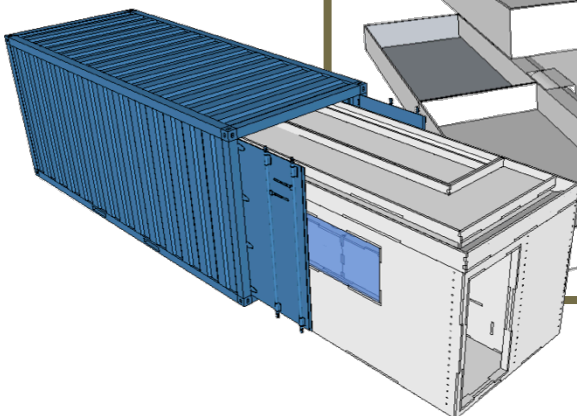
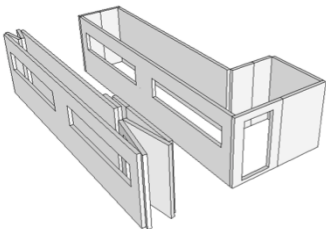


Mattress would fit in here

Unfolded



The sleeping system that I have designed is space efficient as well as multifunctional. The whole sleeping system will be incorporated into one of the walls of the shelter. The sleeping system has the ability to fold away for storage or just to create space to do certain tasks. When unfolded the sleeping system can be used similarly to bunk beds to optimise space so that more people can be provide with place to sleep comfortably. When unfolded and not used for its primary purpose, sleeping, the sleeping system can be used as a work surface proving the mattress is covered. The whole system operates around a simple hinge which allows the product to folded away or opened out for use. The design is very simplistic and would take little effort to manufacture or create.





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Design Ideas



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Interior Accommodation