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Contour Crafting

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EMERGING CONSTRUCTION TECHNOLOGIES

Housing Systems - Contour Crafting

CONTOUR CRAFTING

THE NEED

Victims of disasters such as floods, earthquakes and war have to seek shelter elsewhere. A need arises to rapidly construct houses on site and at minimal cost. This will eliminate the need to transport pre-fabricated shelters long distances, saving the time and costs associated with transportation. Since Contour Crafting is an automated process, labor needs are highly minimized allowing relief workers to allocate their time and effort to rebuilding local infrastructure such as water sanitation and distribution systems, roads, electrical and communication systems as well as irrigations systems.

FIGURE 1 CONTOUR CRAFTING

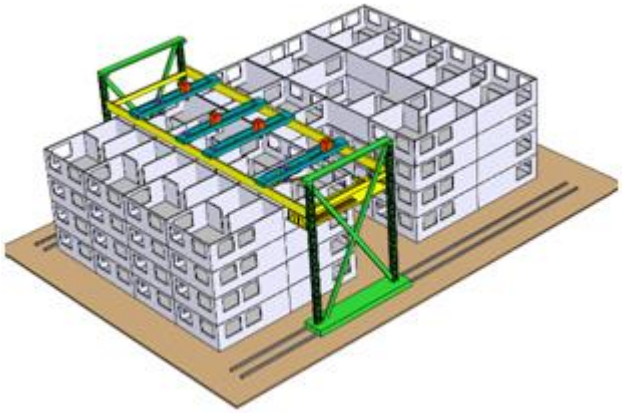

FIGURE 2 3D MODEL - CONTOUR CRAFTING

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THE TECHNOLOGY

Contour crafting is a fabrication process by which large scale parts can be fabricated quickly in a layer by layer fashion. This technology uses conventional robotics and a novel extrusion system to rapidly build three dimensional objects. Concrete is the primary material that is used by Contour Crafting, however, a variety of paste materials such as adobe, ceramics, gypsum and even wood chips mixed with epoxy may be used by the process.

THE BENEFITS

- Contour Crafting has a strong potential to provide homes to disaster victims in a very short time.
- A Contour Crafting machine can build a 2,000 square foot house with all utilities for electrical and plumbing in less than 24 hours.
- CC eliminates the need to transport large prefabricated structures long distances, saving the time and costs associated with transportation.
- As this is an automated process, labor needs are highly minimized.

STATUS

6 foot high structures as well as a variety of curved structures have been built out of concrete. Contour Crafting "Print a House" construction technology was recently funded by Caterpillar.

REFERENCES

1. http://www.contourcrafting.org/

REVIEWERS

Peer reviewed as an emerging construction technology

DISCLAIMER

Purdue University does not endorse this technology or represents that the information presented can be relied upon without further investigation.

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