

Wed 30 Sept 9 2009

Silly but Serious  
Design "Space"

Use cardboard to actually heat the coffee rather than just insulate it.

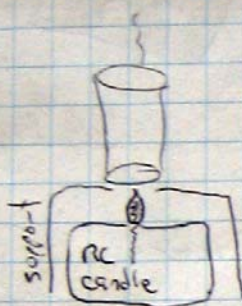
Basic Design I



The cardboard bonfire

- \* coffee would be very hot
- \* only safe if E&D wear asbestos clothing
- \* some East Campus students would approve
- \* tilt & pour tests challenging
- \* easy to do - require cardboard & match
- \* technology is 30000+ years old = robust

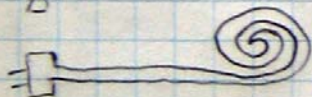
Basic Design II



Cardboard/rubber cement candle warmer

- \* flame easier to control than bonfire
- \* might explode, might not explode
- \* technology is 5000+ years old

Design III



Conductive cardboard ohmic heating hotplate

- \* No open flame (for a while)
- \* Technical challenge = finding conductive cardboard

Preliminary FRDPARC Design I - "Bonfire"

Functions	Design Parameters (how to implement function)	Analysis	Research & References	Risks	Countermeasures
produce & deliver heat	roll cardboard less light on fire	ohmic content of cardboard? burn rate control?	burn rate control?	YES (oops)	Asbestos? Fire extinguisher?
health/safety D&E	asbestos? this is a problem	Needs work	Needs work	YES	Needs work
style	East Campus judges only - or bribes	fire is fascinating	history of fire? NFPA standards	judges may have poor taste	Bribes & ribbon bows
pour/tilt	Have fire alarm traps	needs work	rel. many testing?	YES	Needs work
"cost"	labor simple materials	multiple elements times of coffee	high chloride cardboard?	not enough heat in material	slow burn insulate heat transfer

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21W.732 / ESG.21W732 Science Writing and New Media  
Fall 2010

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