Yellow Team Project Mockups

Living and Working in Constrained Space

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Refrigerators

a common problem?

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Lazy Susan Refrigerator: concept

- Rotating storage shelves
- Narrow, deep footprint

- Optimizes constrained space in refrigerator

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Consumer Contract

What do customers need from our refrigerator?

- Maximize useable space inside of a fixed footprint
- Safe, easy access to all food in the fridge
- Standard features:
  - Crisper drawer
  - Storage bins

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Our Mockup

- Duplicate volume of a mini-fridge for comparison
  - How does a consumer perceive the interior volume?
  - Can we make a smaller, cylindrical volume more useful?

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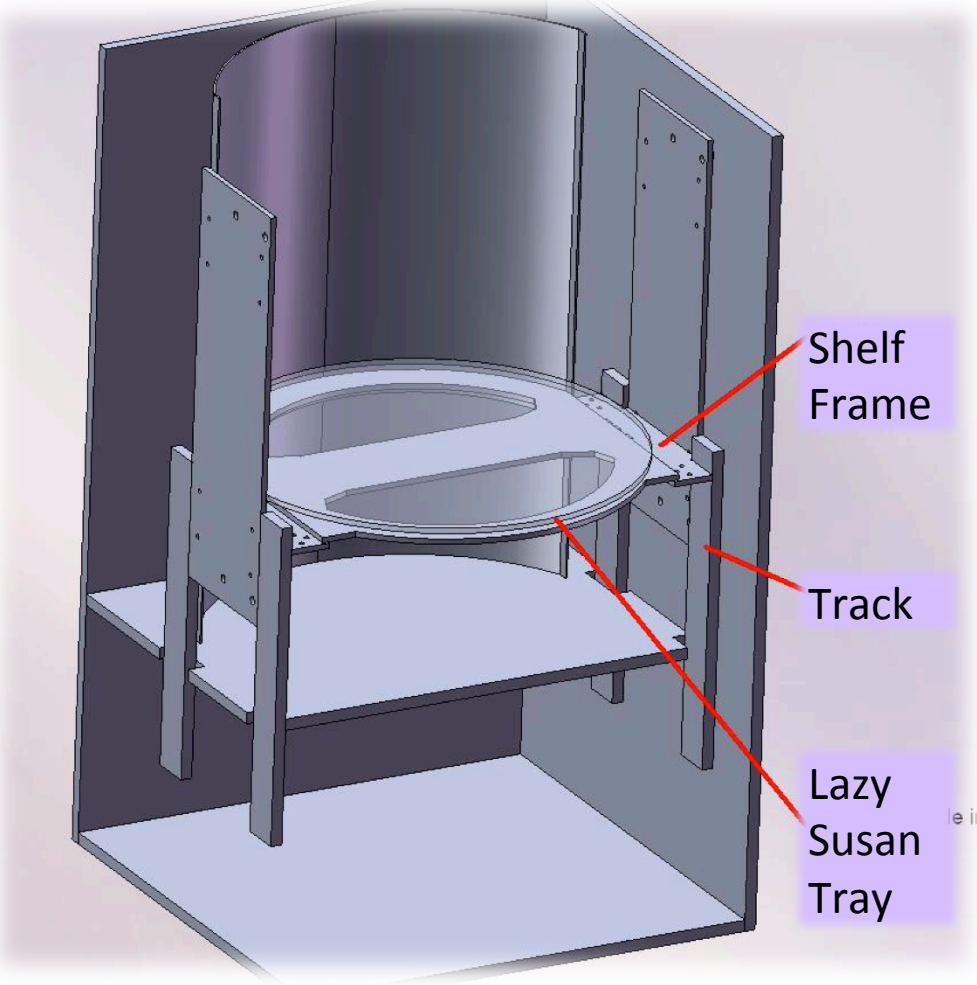
Key Risk: adjustable, rotating shelves

- Always adjustable
- Removable
- Damped rotation

- Many design possibilities:
  - Lead screw
  - **Track & cam lock**
    - **(second evolution)**



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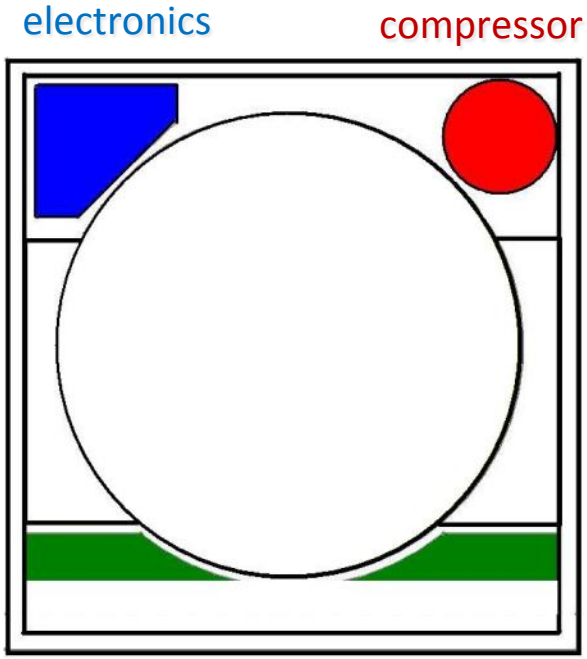
Key Risk: maximizing usable space



- Ideal: Configuration of refrigeration components to fit in corners
- Requires a custom compressor

Current: Reuse of mini-fridge compressor in bottom corner

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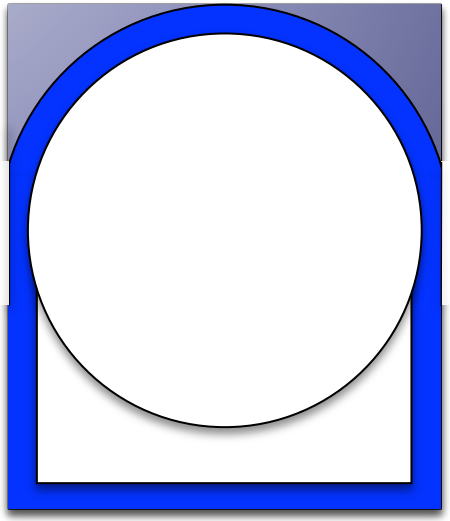
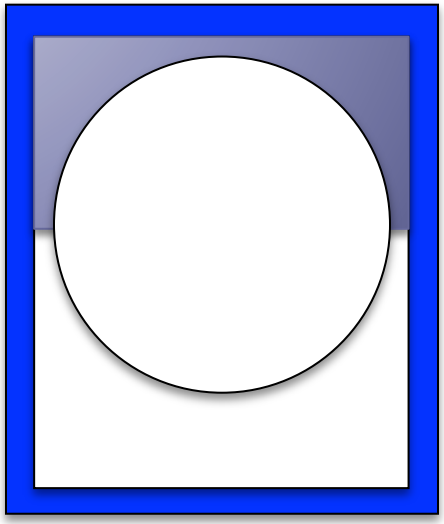
Key Risk: maximizing usable space

- Ideal: largest possible Lazy Susan
- Thermal FEA for feasibility



93% of original area



84% of original area

- Mockup: installed Lazy Susan without modifying internal geometry

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Product Contract

Customer Need	Attributes	Engineering Specifications
Maximize space inside fridge for certain defined footprint	Organization of Refrigeration Components and usable space	Most common footprint (sold): 31-35 inches deep Cubic footage: 20-25 ft^3
Ability to reach all items in fridge	Organization of Components, Shelf Mechanism	Length of average arm: ~29" Length of average forearm: ~14'' Number of layers of food: 3
Ability to Clean	Materials, Shelf Mechanisms	Non-porous materials, removable, maneuverable shelves
Ability to See Items in Fridge	Materials, Lighting	Clear shelf material At least 60W lighting
Storage Space on Door	Door Shelf Dimensions	Gallon of milk: 6" x 6" x 10" plus leeway

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