Forward Faster by Design
BREAKFAST SERIES

Faster Glass
imagine better + innovate faster

McCOLL CENTER FOR ART + INNOVATION

Recap: Creativity Loves Constraints

March 8th, 2019

Creativity Loves Constraints

Can you build a ”spaceship” in five minutes or less with random materials? Why yes, yes you can!

Scarcity prompts us to consider using resources in less conventional ways.

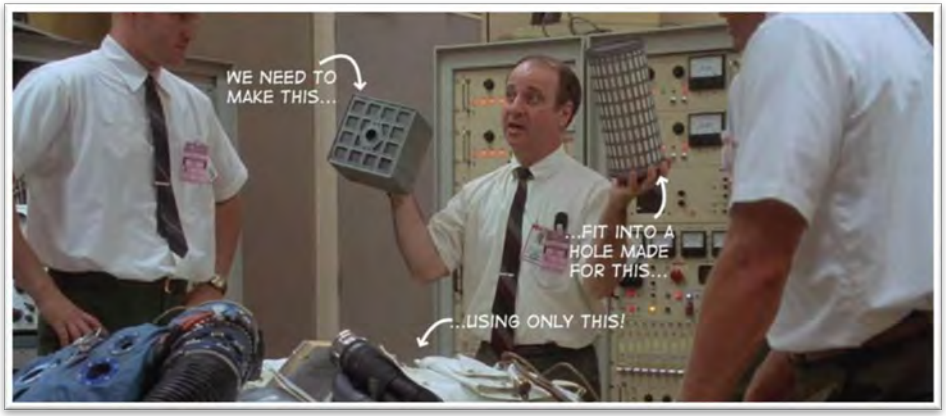
> “Gentlemen, we’ve run out of money. Now we have to think.”
>
> *Sir Winston Churchill*

Constraints Take Many Forms

- Time
- Money
- People
- Materials
- Physical space
- Solution requirements

Apollo 13 – The CO2 Problem

The NASA engineers who worked through the Apollo 13 crisis had to come up with solutions to an array of problems with limited time and resources. That they were able to construct a CO2 filter solely from components available to the astronauts is an incredible example of creativity shaped by immutable constraints.

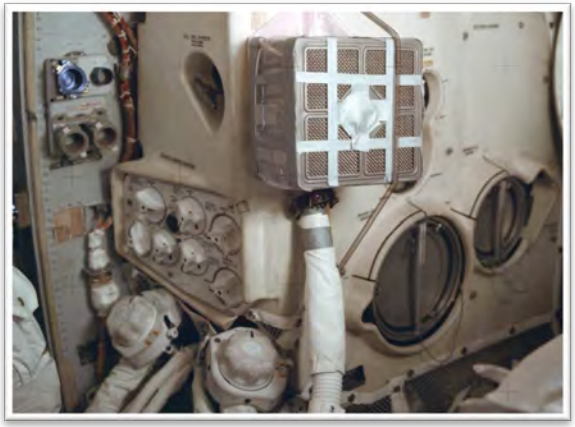


https://youtu.be/ry55--J4_VQ

The Greatest Space Hack Ever
Popular Science, Oct. 8, 2014

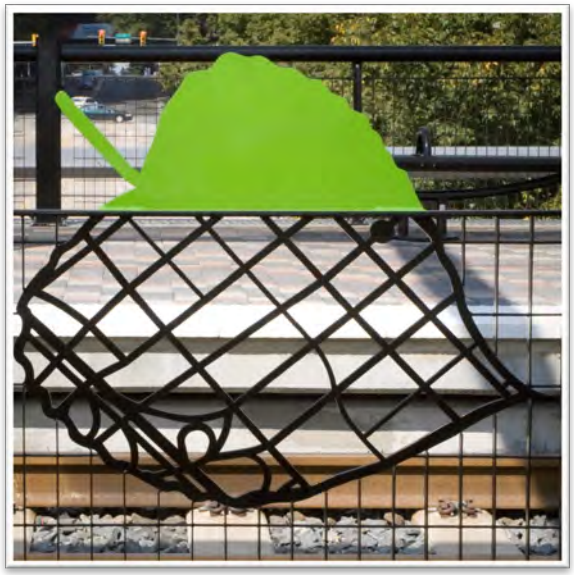
The movie version of how the team solved the CO2 problem is quite dramatic. But the actual story illustrates how contingency planning for a different scenario provided them with some ideas to build upon.

https://www.popsci.com/article/technology/greatest-space-hack-ever



Def Leppard

After losing his left arm in a horrific car accident, Def Leppard drummer, Rick Allen, had to learn how to play differently using a kit custom-built for him. However, according to singer Joe Elliott, Rick's limitations forced him to play simpler, more inventive drum fills, which better suited the songs they were recording to be played in large arenas.



Art for the Charlotte Light Rail

A noted sculptor, Shaun Cassidy was excited to have been selected to create works of art for Charlotte's new light rail. That excitement was tempered when he was told by an engineer that his work couldn't take up any space on the station platforms. Initially puzzled about how to create a sculpture with such a constraint, Shaun was inspired by an eroded leaf to create "leaf-like" pieces that would be inserted into the iron fencing that separated the tracks.

https://youtu.be/Ph7xKZtKdGk?t=453

Self-Imposed Constraints

To stimulate creative problem-solving, we can impose artificial constraints. The **Vanishing Options Test** is one technique, as it prompts you to generate solutions after removing one or more options. For example, how might a group of people line up in birthday order if they were not allowed to speak?

Jan. 1 → Dec. 31

Assumed Constraints

Sometimes we accept “assumed” constraints that unnecessarily stifle creativity. Three factors that drive this behavior are:

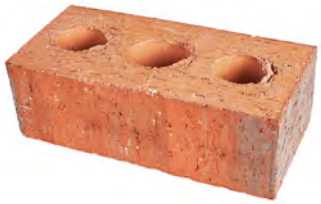
- **Pattern Recognition**
  Our brains are wired to take the path of least resistance as a way of conserving energy. Spotting patterns that make sense and then moving on to the next “problem” is one way we do this.

2, 4, 6, _____

- **Past Experience**
  We draw upon our knowledge and past experiences to solve problems, which is another form of energy conservation.

Mary had a little ____.

- **Functional Fixedness**
  Once we know how an item is used, we rarely think about other potential uses unless prompted to do so.



What can we do differently?

1. Identify and question constraints.
   (Confirmed or assumed?)

2. Interrogate requirements.
   (How do we KNOW these are requirements?)

3. Give back the “givens.”
   (Be careful of treating some “rules” as laws that cannot be questioned or broken.)

About the Forward Faster by Design Breakfast Series

Forward Faster is a monthly event, typically held on the second Friday, where a growing tribe of Charlotte thinkers and doers gather to explore how the principles and practices of Human-Centered Design can fuel business, civic, and social innovation. The series is a mix of presenters, panel discussions, and workshops all aimed at sparking new ways of thinking, seeing, and doing.

About Faster Glass

Faster Glass is an innovation training and consulting firm focused on helping people and organizations leverage the discipline of Design Thinking to do four things:

1. Co-create solutions to complex problems,
2. Intentionally design extraordinary experiences,
3. Strengthen their innovation capabilities, and
4. Build a culture of innovation.

For more information about Faster Glass and their services, please contact Dan Black, Innovation Architect at dan.black@fasterglass.com, 704.502.0343 or just schedule a meeting here.

About McColl Center for Art + Innovation

McColl Center for Art + Innovation is a nationally acclaimed artist residency and contemporary art space in Charlotte, North Carolina. Located in the former Associate Reformed Presbyterian Church in Uptown, McColl Center houses nine individual artist studios, more than 5,000 square feet of exhibition space, and multiple common-use spaces, including a studio for large-scale sculpture fabrication. McColl Center's historic neo-Gothic revival building is one of the most unique and exciting spaces in Uptown and their art-filled venue is available to rent for a range of events including weddings, receptions, dinners, corporate gatherings, workshops, and more.