



DESIGN MINDSET SOLUTIONS

WEEK 03: CLASS 01

STUDIO CONCEPTS: **problem solving**

- *HEURISTIC:*
- *adjective* heu·ris·tic \ hyu-'ri-stik \
 - : involving or serving as an aid to learning, discovery, or problem-solving by experimental and especially trial-and-error methods *heuristic* techniques
 - a *heuristic* assumption
 - ; *also* : of or relating to exploratory problem-solving techniques that utilize self-educating techniques (such as the evaluation of feedback) to improve performance a *heuristic* computer program

PROBLEM SOLVING

■ “Creativity thrives when the limits of a problem are known.”

–William Peña

Team Project: “Problem Seeking” – 5 Step Process

1. Establish Goals
2. Collect and Analyze Facts
3. Uncover and Test Concepts
4. Determine Needs
5. State the Problem



GATHERING OF DATA: “Problem Seeking” – Core Questions

1. Establish **Goals** (qualitative)
 - **What do we want to achieve...Why?**
2. Collect and Analyze **Facts** (quantitative)
 - **What is this all about?**
3. Uncover and Test **Concepts** (qualitative)
 - **How do we achieve the goals?**



GATHERING OF DATA: "Problem Seeking" – Core Questions

4. Determine **Needs** (quantitative)

- **What are the Cost, scope, quality and time constraints?**
- **Distinguish needs from wants**

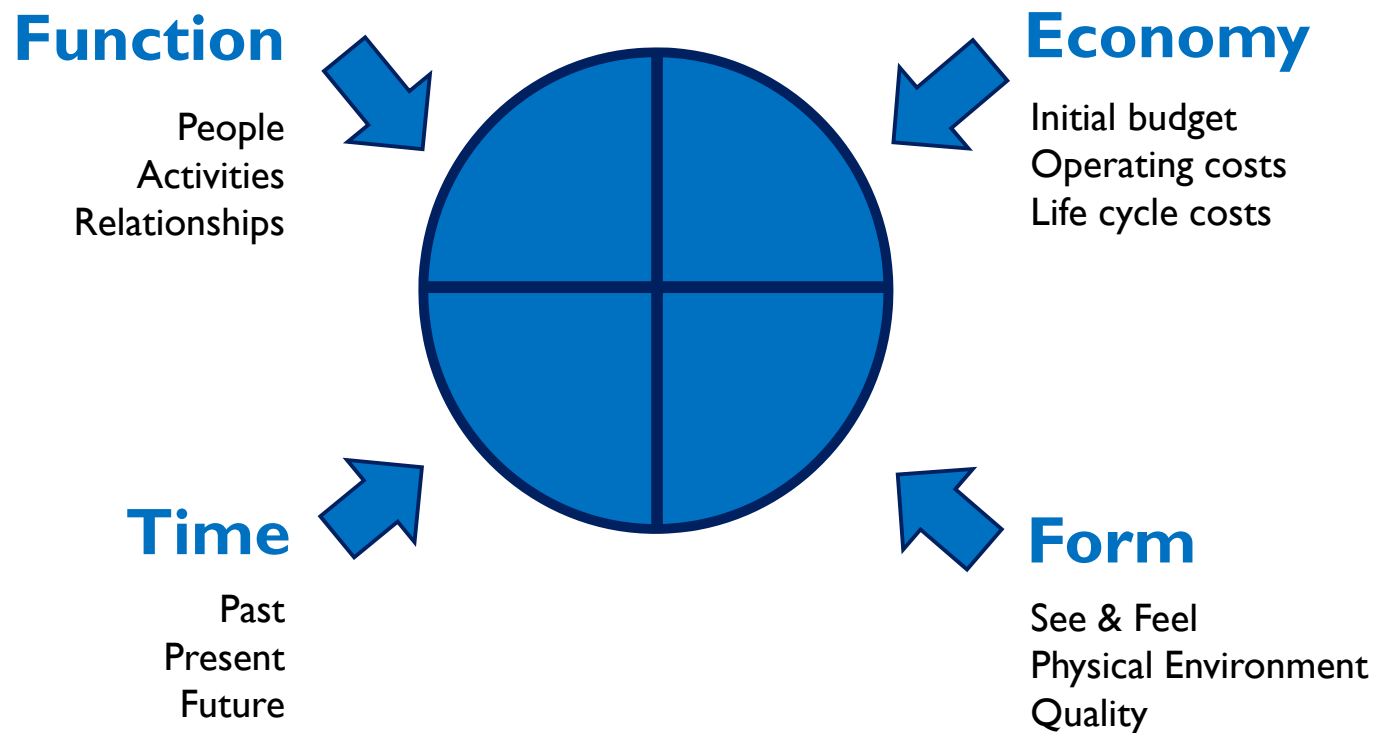


5. State the **Problem** (qualitative)

- **What are the significant conditions and general directions our concept should take?**
- **Consider the components of the Whole Problem when formulating problem statements**



STUDIO CONCEPTS: *The Whole Problem* – 4 Considerations



INFORMATION INDEX: **Idea Matrix** – key word considerations

	Goals	Facts	Concepts	Needs	Problem
Function <ul style="list-style-type: none"> • People • Activities • Relationships 	Mission Maximum/Minimum Number Security Efficiency Priority of Relationships	Statistical Data User Characteristics Organizational Structure Behavioral Patterns Value of Potential Loss	Service Grouping People Grouping Activity Grouping Security Controls Flow Functional Relationships	Organizational Considerations Functional Needs	Unique and important performance requirements that will shape design
Form <ul style="list-style-type: none"> • See & Feel • Physical Environment • Quality 	Efficiency of Format Projected Image Sustainability Client Expectations	As-Is Analysis Rules & Regulations Review	Enhancements Accessibility Character	System Design Criteria	Interaction considerations that will shape design
Economy <ul style="list-style-type: none"> • Initial budget • Operating costs • Life cycle costs 	Extent of Funds Cost-Effectiveness Return on Investment	Cost Parameters Maximum Budget Market Analysis Economic Data	Cost Control Efficient Allocation Multifunction / Versatility Cost Reduction	Budget Estimate Analysis	Attitude towards the initial budget and its influence on the basic design
Time <ul style="list-style-type: none"> • Change • Growth • Schedule 	Change Growth Schedule	Significance Projections Escalation Factors	Convertibility Expansibility, throw away or incremental Phasing	Time Schedule	Implication of change/growth on long- range performance



DESIGN MINDSET SOLUTIONS

WEEK 03: CLASS 02

TEAM PROJECT: The Pope Returns To Philadelphia

- Your consultant team must solve a problem caused by the popes visit.



TEAM PROJECT: **The Pope Returns To Philadelphia**

- Your consultant team must solve a problem caused by the pope's visit.
- **Establish Goals**
 - What is your value proposition?
- **Collect & Analyze Facts**
 - Identify the Human Capital
 - What were the barriers
 - Key Success Factors/Failures
 - <http://education.temple.edu/help/survey-tools-dissertations-and-research>
- **Uncover & Test Concepts**
 - What has been done before (Precedent)
 - What worked & why?
- **Determine Needs**
 - Cost, scope & time (triple constraints)
- **State the Problem**
 - What direction should we take?

Peña, William, [Problem Seeking, An Architectural Programming Primer](#), Third Edition, AIA Press, Washington, D.C., 1987. ISBN: 0-913962-87-2

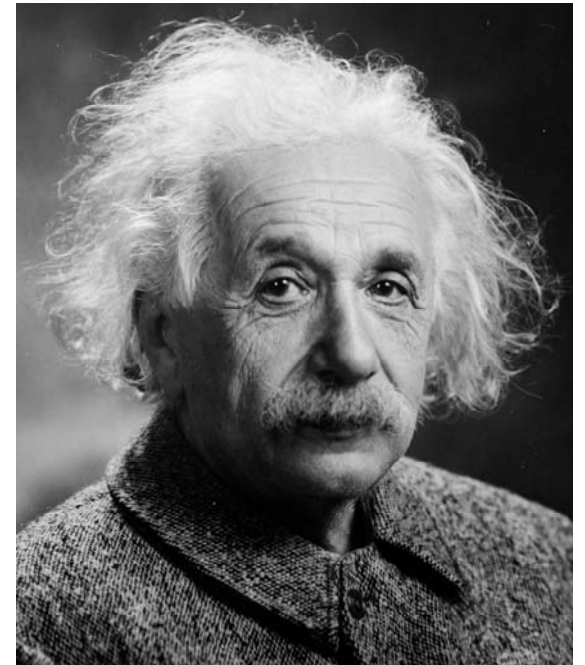
TEAM PROJECT: The Pope Returns To Philadelphia

■ Topics to choose from:

- Homeless – Team _
- Attendance projections 3 Team
- Security | Team
- Food (guests/vendors inside the boundary) 2 Team
- Communication (local/national) – Team
- Local Restaurants (food service industry) 5 Team
- Lodging – Team
- Transportation/Parking 4 Team
- Medical 6 Team

Design Process: Problem Solving

“If I had an hour to solve a problem, I’d spend 55 minutes thinking about the problem and 5 minutes thinking about solutions.”
-Albert Einstein



TEAM PROJECT: *The Pope Returns To Philadelphia*

■ **Presentation Minimum Requirements**

- 9 minute Presentations (they are timed...be mindful of the clock!)
 - Everyone must present (speak)
- 3 minute Q & A / Class feedback to follow
- Include your team name and team members on title slide
- Utilize tools from the 5 step process
 - Order of 5 steps may change depending on your project (except #5)