

# Is it design?

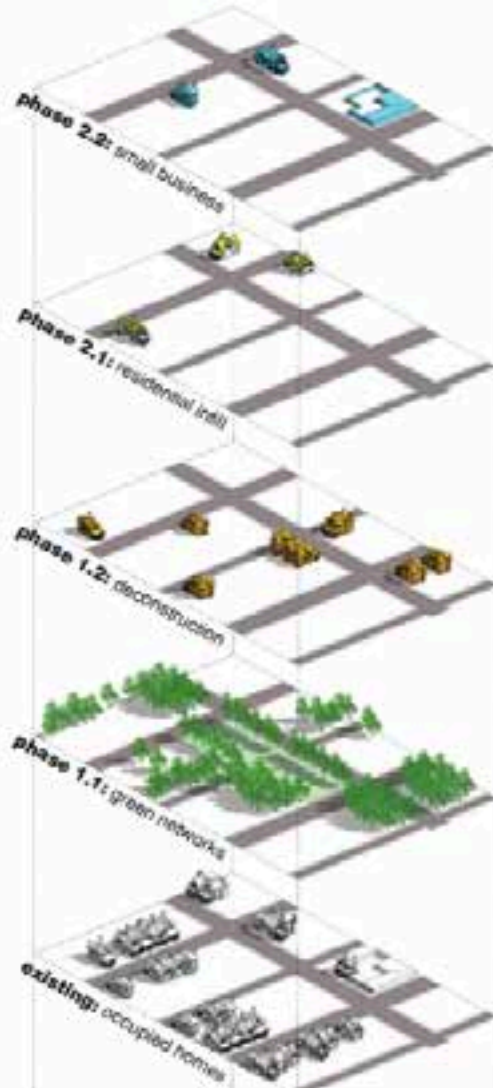
## How geodesign compares with other design theories

Kelleann Foster, RLA, ASLA  
*Stuckeman School of Architecture and  
Landscape Architecture  
Penn State University, USA*

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# The exhilaration of the design experience



community workshop coordination

**REstore:** An ecologic and economic fused planning strategy for the community of Beltzhoover  
Client: Beltzhoover Community Council.

Conducted analysis concluded that in order to achieve the goal of reversing blight and stimulating reinvestment in Beltzhoover, the general public perception and community pride of the neighborhood must first be improved.

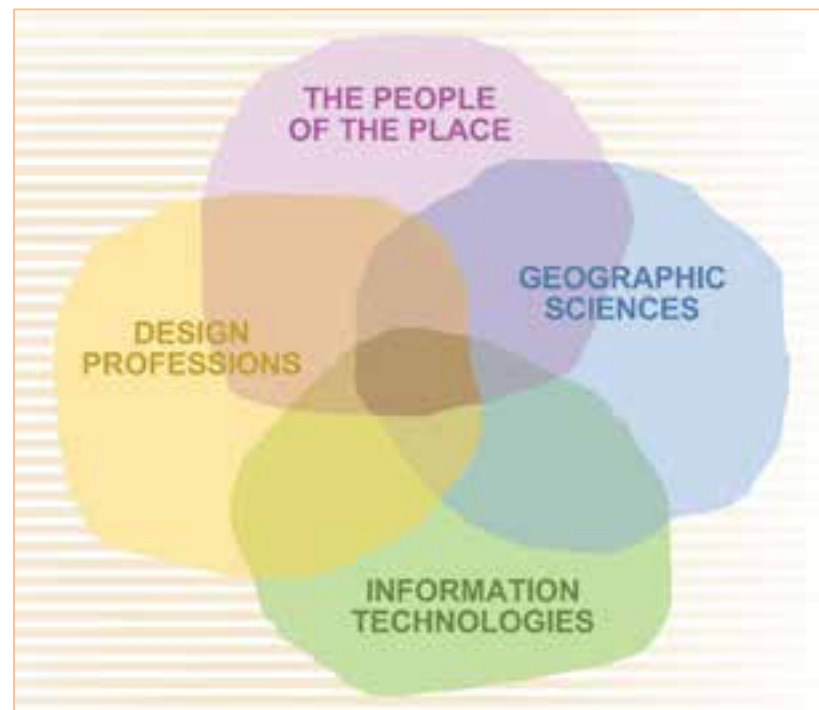
Instead of representing decline and decay within a community, the vacant house can represent opportunity. These undesirable skeletal remains of blighted properties should be viewed as an neighborhood waiting to be discovered.

**tzhooover**  
[ammimga]



## What makes geodesign different from GIS?

- Layers are used for decision support -  
- isn't this like geodesign?
- Geodesign is different take on decision making. It includes design-thinking which provides a range of choices, critical evaluation of those options and involves community values.



*("A Framework for Geodesign: Changing Geography by Design"  
Steinitz, 2012)*

# Geodesign is third wave of GIS evolution

#1 is data (& maps that bind, secure and use data)

#2 is analysis and feature processing -- analyze geography for various purposes and reasons.

#3 is design – doing creative work with that analysis

*Excerpted from interview with Bill Miller, Esri Director of Geodesign:*

<http://www.sensysmag.com/dialog/interviews/28386-geodesign-provides-the-third-phase-of-gis-evolution.html>



<http://www.azavea.com/products/geotrellis/features/spatial-operations/composite-models/>

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# Design defined for this presentation

**de·sign**  (dī-zīn')

v. **de·signed**, **de·sign·ing**, **de·signs**

v.tr.

1.
  - a. To conceive or fashion in the mind; invent: *design a good excuse for not coming to class.*
  - b. To formulate a plan for; devise: *designed a marketing strategy for the new product.*
2. To plan out in systematic, usually graphic form: *design a building; design a course of study.*
3. To create or contrive for a particular purpose or effect: *a game designed to appeal to children.*
4. To have as a goal or purpose; intend.
5. To create or execute in an artistic or highly skilled manner.


v.intr.

1. To make or execute plans.
2. To have a goal or purpose in mind.
3. To create designs.

n.

1.
  - a. A drawing or sketch.
  - b. A graphic representation, especially a detailed plan for construction or a model: *the architect's design for the new building.*
2. The purposeful or inventive arrangement of parts or details: *the aerodynamic design of the airplane's wing; the furniture of simple but elegant design.*
3. The art or practice of designing or making designs.
4. Something designed, especially a decorative or an artistic work.
5. An ornamental pattern. See Synonyms at [figure](#).
6. A basic scheme or pattern that affects and controls function or development: *the design of an epic poem.*
7. A plan; a project. See Synonyms at [plan](#).

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>> Purposeful Process (to solve a problem) – involving creativity and skill

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# Design defined for this presentation

>> Purposeful Process (to solve a problem) – involving creativity and skill

Design thinking	Critical thinking
<ul style="list-style-type: none"><li>• a creative process focused on the 'building up' of ideas.</li></ul>	<ul style="list-style-type: none"><li>• analysis associated with 'breaking down' of ideas</li></ul>

## Design defined for this presentation

Several popular definitions of geodesign include (emphasis added):

“Geodesign is a vision for using geographic knowledge to actively and thoughtfully *design*.”

- Jack Dangermond

“Geodesign changes geography by *design*.”

- Carl Steinitz

“Geodesign is *design* in geographic space.”

- Bill Miller

“Geodesign is a method which tightly couples the *creation of design proposals* with impacts simulations informed by geographic contexts and systems thinking and supported by digital technology.”

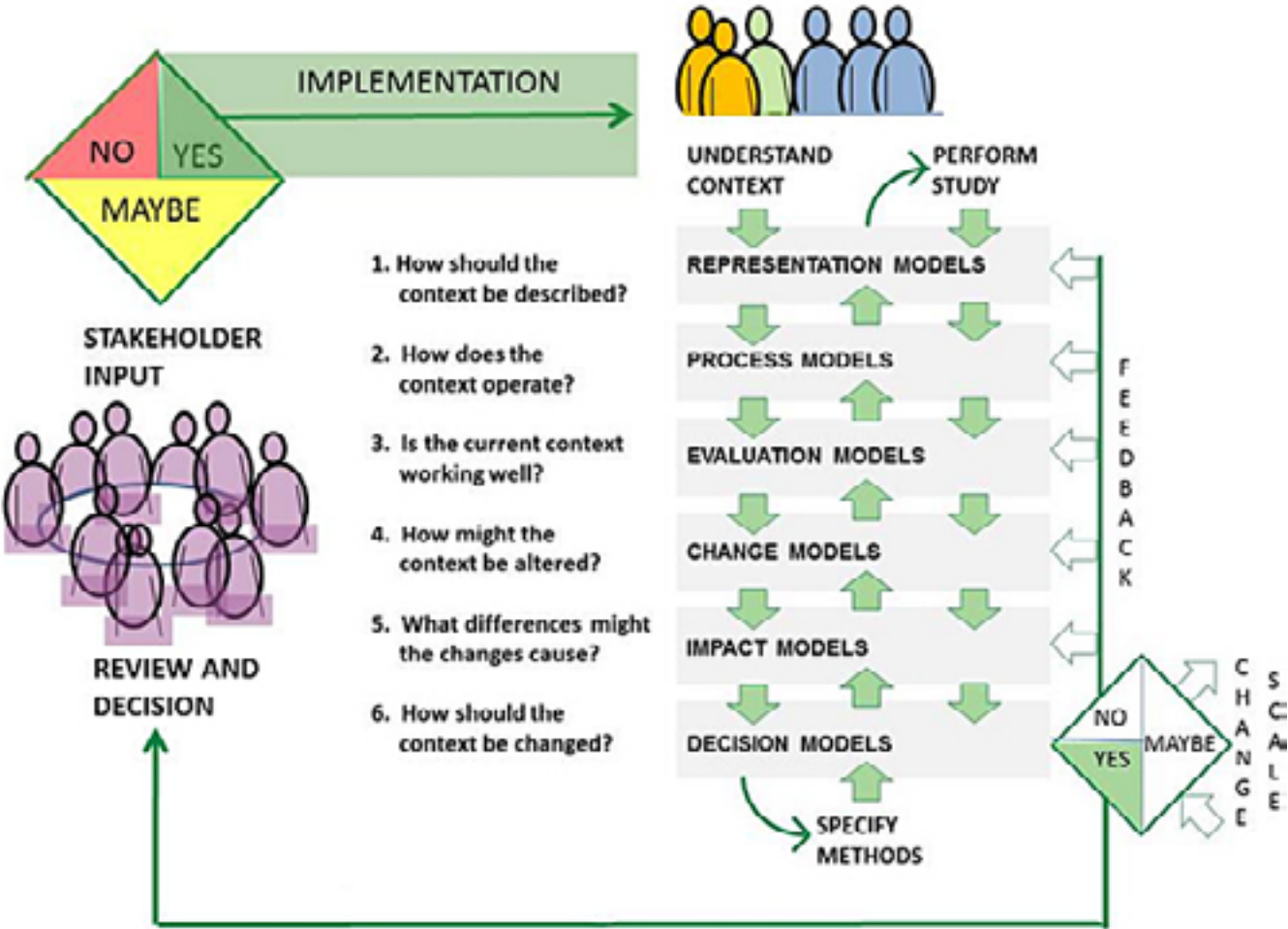
- Michael Flaxman

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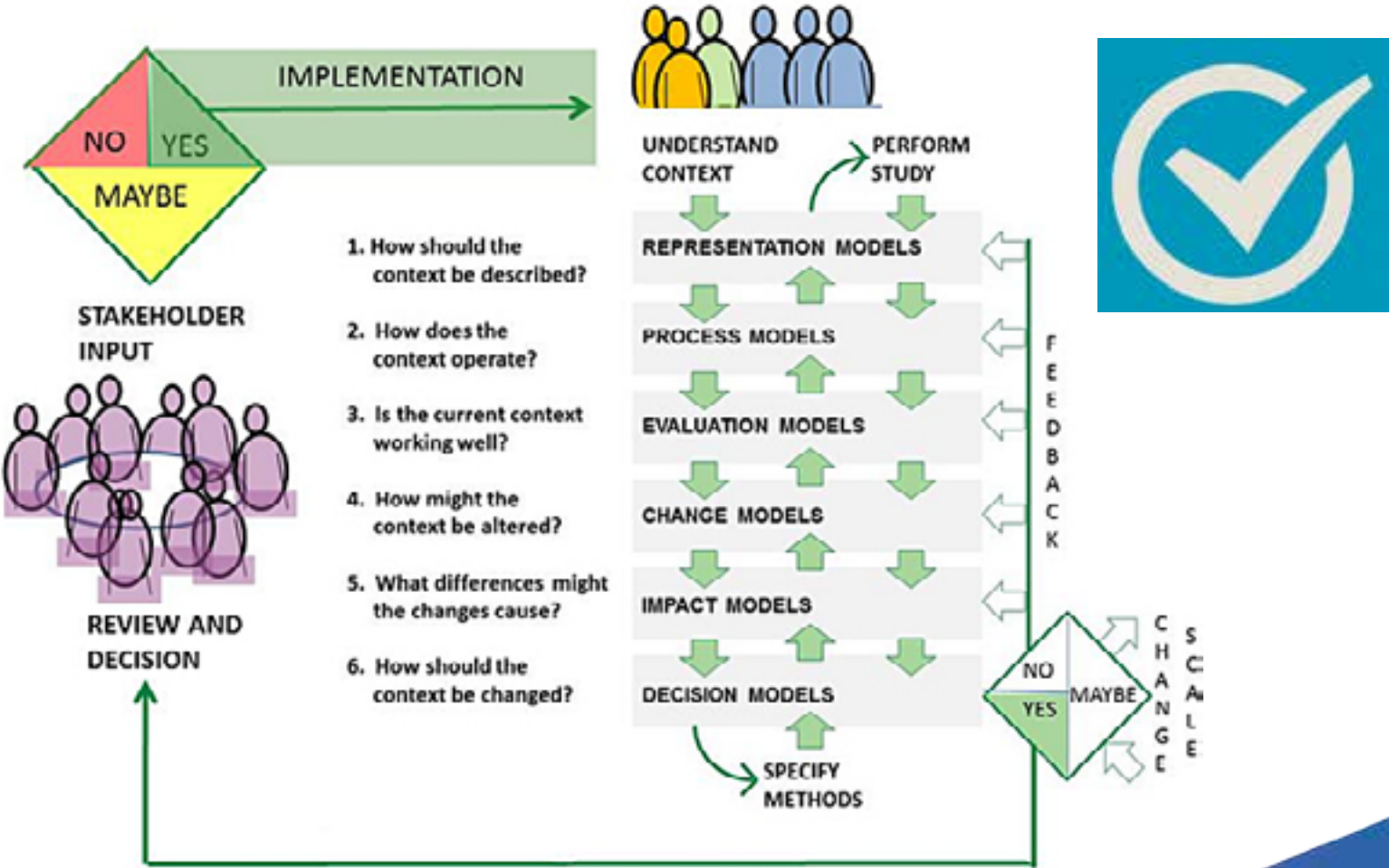




# Design Theories -- Carl Steinitz's "Framework for Geodesign"



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# Design Theories examined

Herbert Simon's

**Seven stages of design thinking**

(from *The sciences of the artificial*, 1969)

Morris Asimov's

**Horizontal structure of design**

(from *Introduction to Design*, 1962)

Vijay Kumar's

**Seven Modes of the Design Innovation Process**

(from *101 Design Methods: A Structured Approach for Driving Innovation in Your Organization*, 2012)

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# Simon outlined the design thinking process through seven stages:

## Define

- Decide what issue you are trying to resolve.
- Agree on who the audience is.
- Prioritize this project in terms of urgency.
- Determine what will make project successful.

## Research

- Review history of the issue; any existing obstacles.
- Examples of other attempts to solve the same issue.
- Note the project supporters, investors, and critics.
- Talk to end-users; most fruitful ideas for later design.
- Take into account thought leaders' opinions.

## Ideation

- Identify the needs and motivations of your end-users.
- Generate many ideas to serve these identified needs.
- Do not judge or debate ideas.
- During brainstorming, have one conversation at a time.

## Prototype

- Combine, expand, and refine ideas.
- Create multiple drafts.
- Feedback from a diverse group of people, include end users.
- Present a selection of ideas to the client.
- Reserve judgment and maintain neutrality.
- Create and present actual working prototype(s)

## Choose

- Review the objective.
- Set aside emotion and ownership of ideas.
- Avoid consensus thinking.
- The most practical solution isn't always the best.
- Select the powerful ideas.

## Implement

- Execute.
- Deliver to client.

## Learn

- Gather feedback from the consumer.
- Determine if the solution met its goals.
- Discuss what could be improved.
- Measure success; collect data.
- Document

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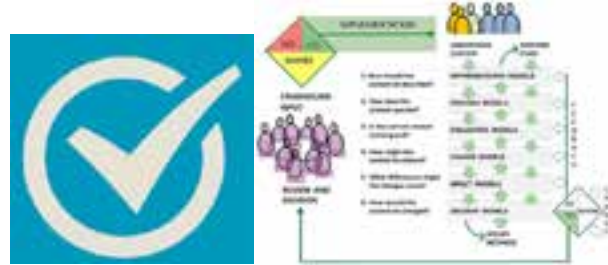
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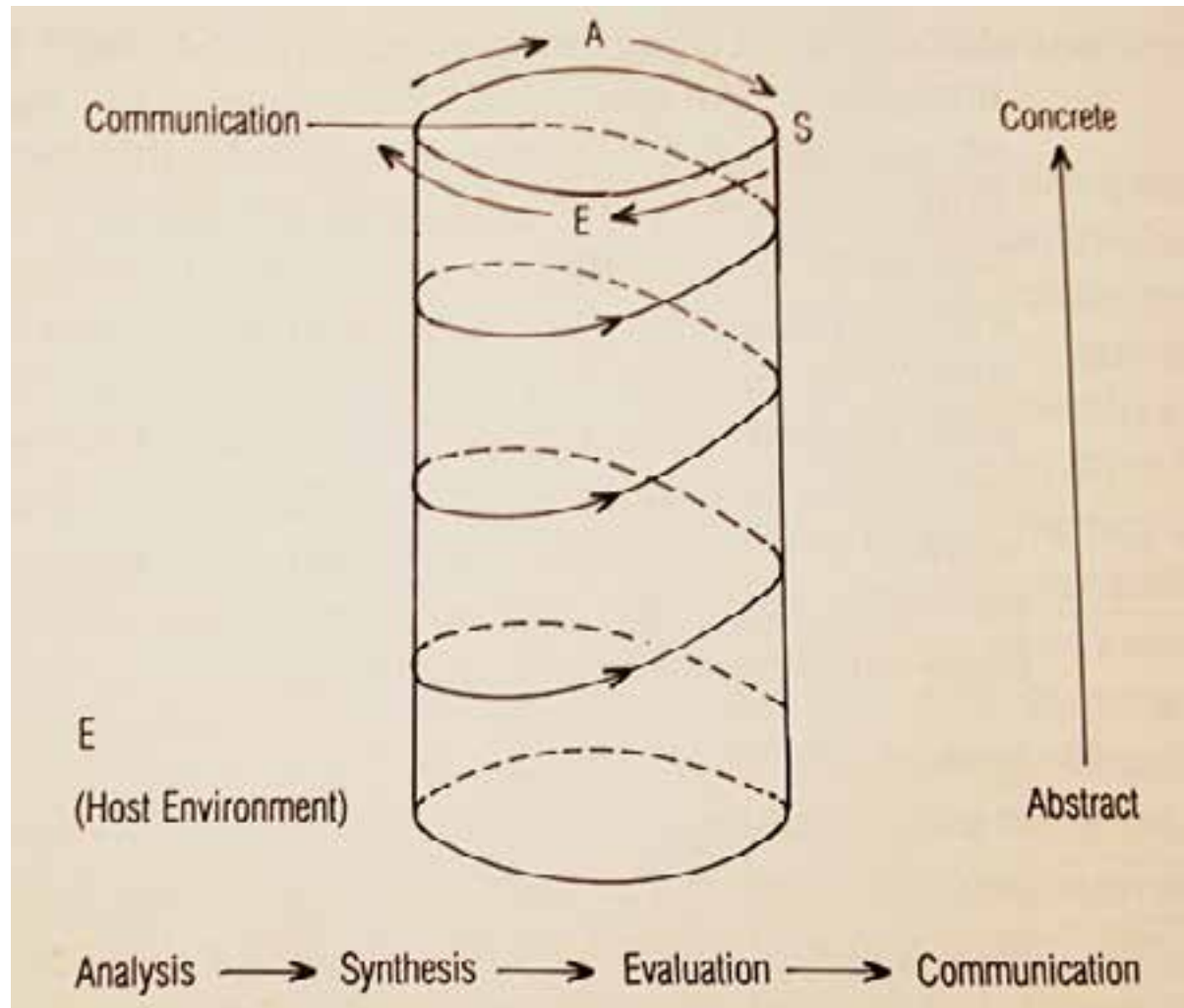
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# Asimov's horizontal structure of design

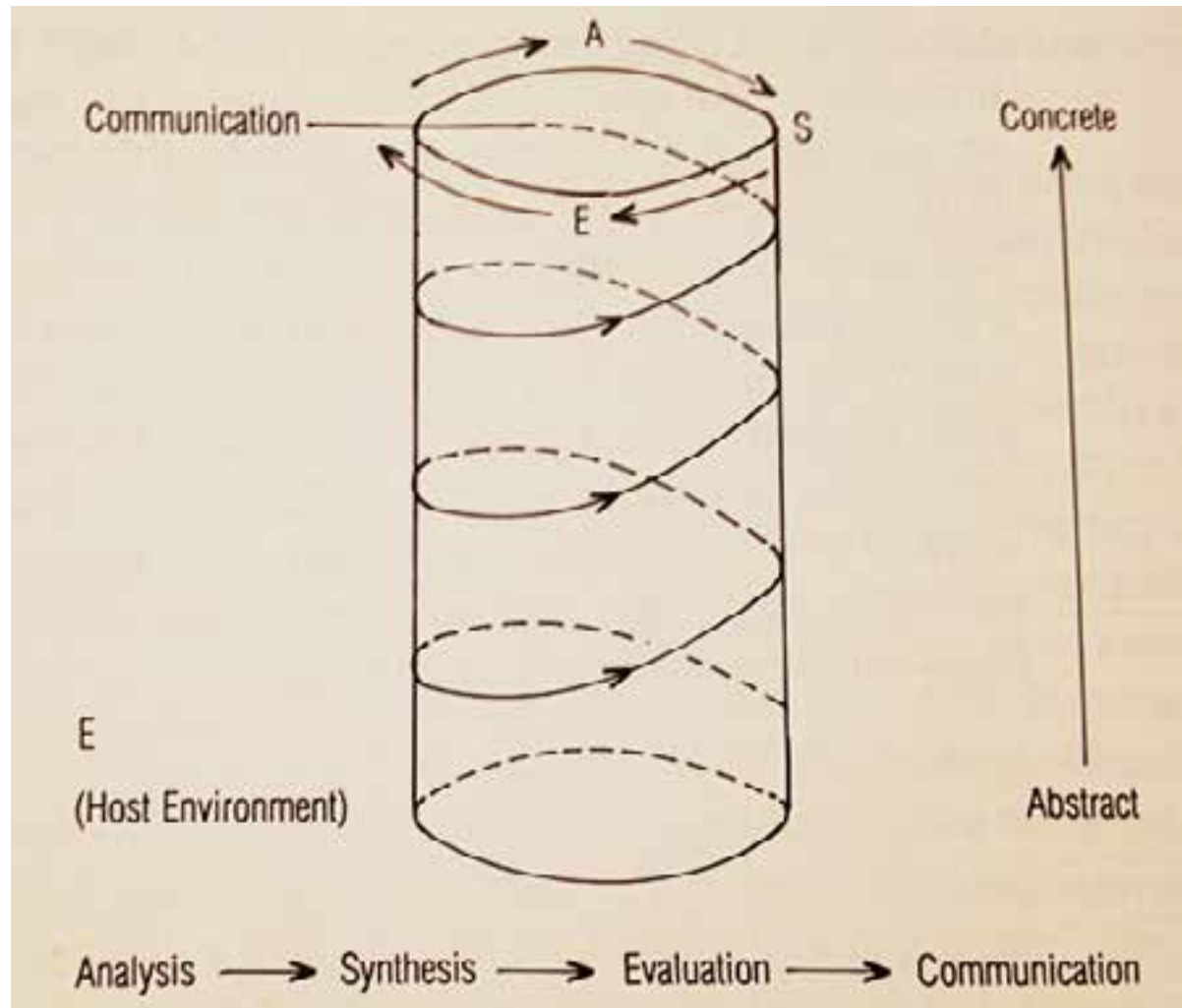


Rowe, Peter. 1991. *Design Thinking*. MIT Press, Cambridge, MA

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# Asimov's horizontal structure of design = "operations research model"

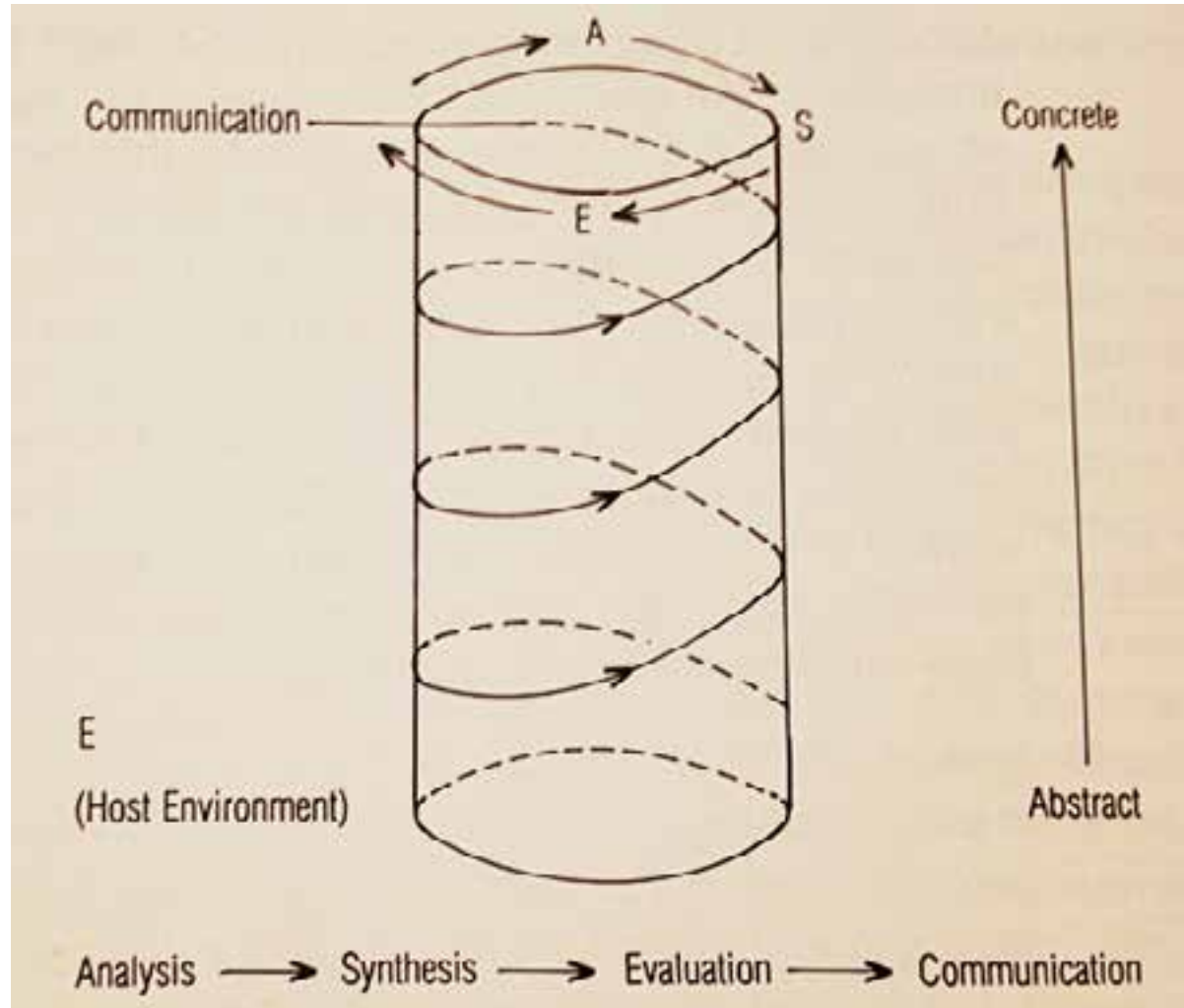


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# Kumar's Seven Modes of the Design Innovation Process

## Mode 1: SENSE INTENT

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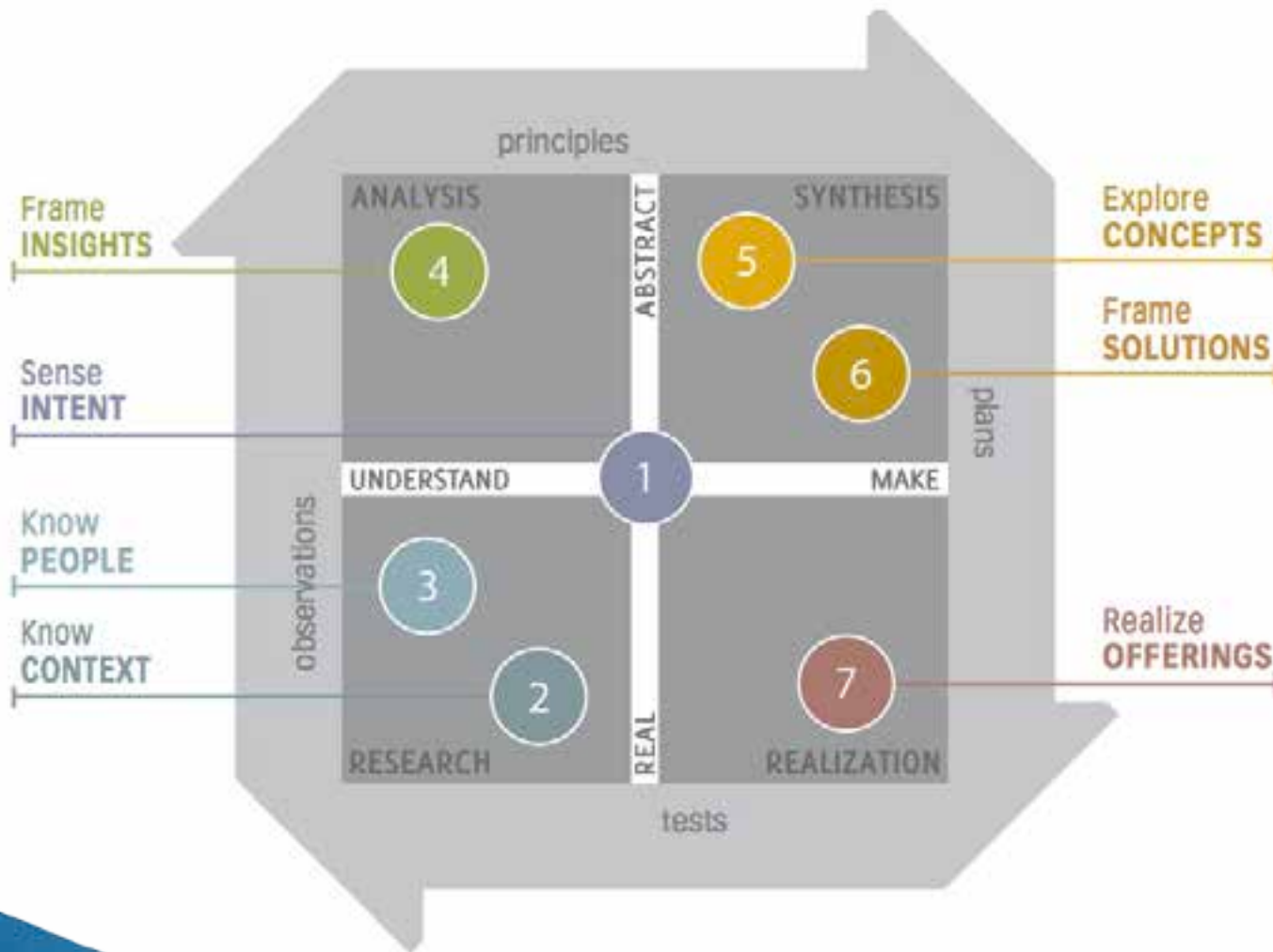
## Mode 7: REALIZE OFFERINGS

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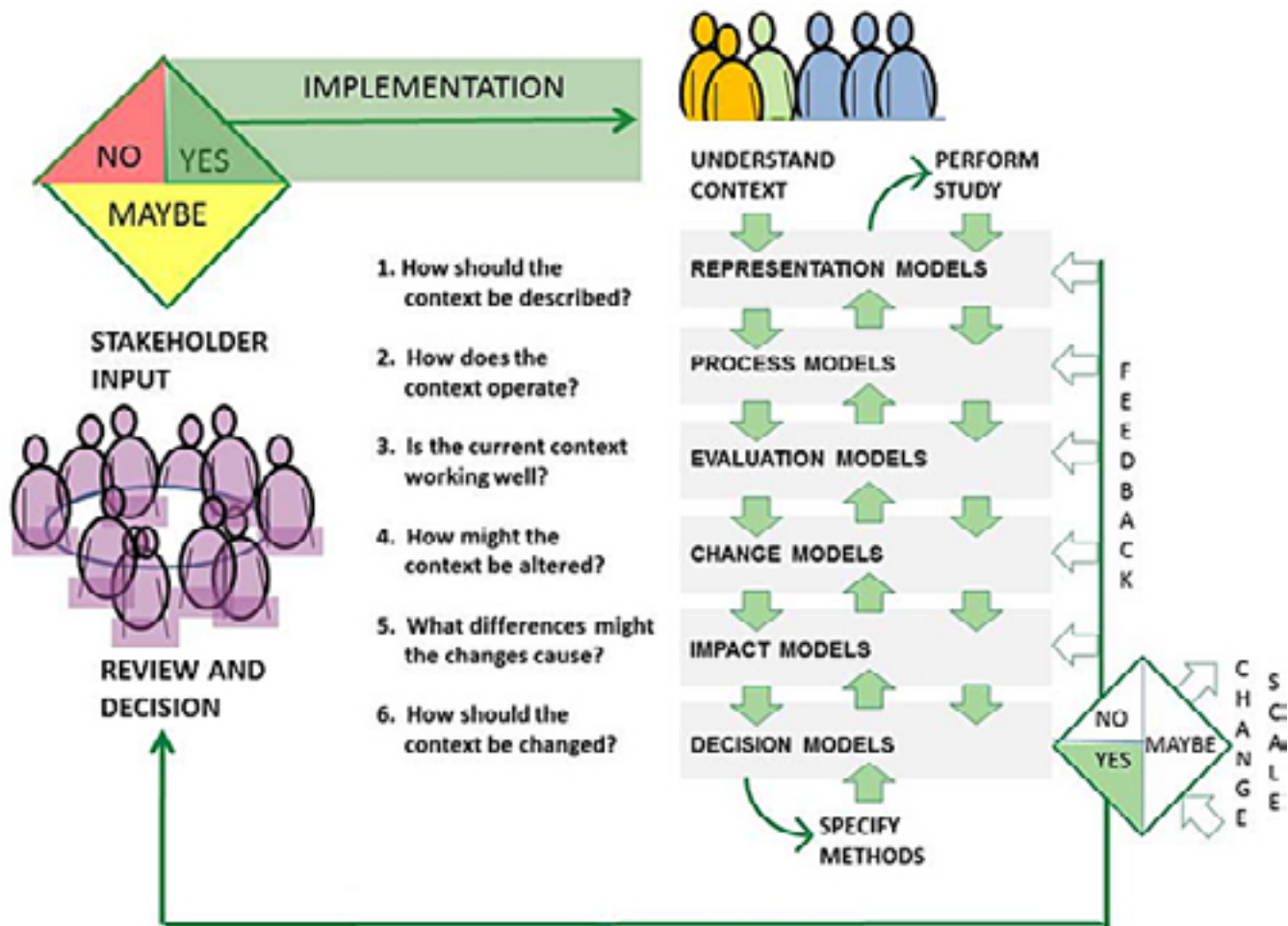
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# Carl Steinitz's "Framework for Geodesign"



# Thank you

Online Graduate  
Certificate in  
Geodesign offered  
at Penn State



[worldcampus.psu.edu/geodesign](http://worldcampus.psu.edu/geodesign)

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