Some ideas about design and design proposals

ESRM 462
Restoration Ecology Capstone: Introduction
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Remember: Design is generating plans to “make” something that doesn’t already exist
Very Traditional Design Method

- Identify need
- Define problem
- Identify many possible solutions
- Analyze for feasibility
- Select one or few
- Communicate and/or produce

Appreciative Design Model

*Premises*

- Design is a Social Process
- Perspectives Change over Time
  - Result of Events and Ideas
  - Result of Mutual Learning
- Structured Decision Processes Support Communication
Appreciative Design Model

Restoration Design is

- Purposeful
- Constrained
- Based in theory
- Hierarchical
- Finite

It is critical that a restoration design proposal communicates all of the above
Purposeful

There is a clear and unambiguous goal

Constrained

There are clear boundaries that the final design must stay within
Based in theory

- *Outcomes* are predictable
  - You need to have a theory
  - You need to use the theory to predict the outcomes
    - Project execution
    - At completion of the installation
    - Subsequent ecosystem behavior (trajectories)
- We will come back to this slide later

It is critical that any proposal communicates that:

- “We really understand and appreciate the situation (problem, challenge, opportunities, whatever)”
- “We have a really great idea”
- “We have the wherewithal to bring the idea to fruition and (solve the problem)”
We really understand and appreciate the situation (problem, challenge, opportunities, whatever)

- Active listening
- Client Expectations (CE’s)
- Stakeholder Expectations (SE’s)
- Overall Goal
- Functional Requirements (FR’s)
- Constraints (C’s)

We have a really great idea

- Describe processes you use to develop and analyze ideas
- Explore the state of the art
- Show alternative ideas that you considered or will consider – lots of ideas are usually a good thing
- Use text, tables, maps, illustrations
- Elucidate your decision making process and criteria
- Explain and use sound theory
We have the wherewithal to solve the problem

• Team makeup
• Individual qualifications, skills and experiences
• Institutional assets (such as facilities, equipment, software)
• Project plan with tasks, responsibilities, timelines, budgets
• Quality of your work as evidenced by your entire proposal
We really understand and appreciate the situation (problem, challenge, opportunities, whatever)

- Active listening
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Client Expectations (CE’s)

- Use your client’s own words and generate a list of their expectations
- Transfer the ones you think “most critical” to an overhead projector slide
Stakeholder Expectations (SE’s)

• Stakeholders are all the folks that are either:
  – Affected by the outcome of your project; or
  – Can affect the outcome of your project
• Who are your project’s stakeholders?
• What are their expectations? (write in the client’s or stakeholders’ own words)
Overall Goal

- The overall goal must accurately reflect the client’s expectations
- It may (but doesn’t have to) reflect some of the stakeholders’ expectation
- It must be technically accurate

- Write a draft “overall goal” for your project and transfer it to a chart board sheet.
Functional Requirements (FR’s)

- Needed functions or functionality (or possibly structure)
- In R.E. often drawn from ecological function, process, structure
  - Examples?
- Technical (R.E. Designer’s) interpretation of the CE’s (must map to CE’s)
- Unbounded (doesn’t limit “how”)
- Write FR’s for your project
- Transfer “best of” to a chartboard sheet
Constraints (C’s)

• Limitations on how the FR’s are met
• Brought to the table by stakeholders
• May be:
  – Natural    – Legal    – Political
  – Ethical    – Economic – Irrational
• Who are the stakeholders for your project?
• What are the constraints they bring?
Based in theory

• Outcomes are predictable
  – You need to have a theory
  – You need to use the theory to predict the outcomes
    • Project execution
    • At completion of the installation
    • Ecosystem behavior (trajectories)
• You use the outcome predictions to make your design decisions

Based in theory (2)

• One important collection of theory is “restoration ecology”
• Other potentially important areas of theory are:
Hierarchical

• Big picture comes before the details
• Details can elucidate the bigger picture
  – Moving targets!
  – Perhaps design is inherently iterative
  – Soft Systems methodology
• Specifying Design Parameters (DPs = physical things you can directly specify) spawns new FRs and/or makes new Cs relevant

Hierarchical

• Example – Bicycle
  – DP of a derailleur is selected before the dimensions of the cogs (little sprockets) are specified
• Example – Restoration
  – DP of mulch is selected before a particular commercial fabric is specified (over perhaps cardboard)
Finite
(when is “the design” done?)

• **The design is a “plan”**
• Who must approve the plan?
• Who will execute the plan?
  – A “person of ordinary skill” in the art
• Who will approve the installation?
  – Does it match the plan
  – Is ambiguity good or bad?
• How will disputes likely be resolved?
• **This lecture is finite too!**