RCG

• Requirements
  – All mandatory attributes that define success
• Constraints
  – Anything standing in the way of success
• Goals
  – Desired attributes that define a greater level of success

Checklist : Req & Const

• Are they unambiguous and testable?
  – Does each one have a CLEAR pass/fail criteria?
• Do they fully define the function?
  – Can a stranger determine what the project is from them alone?
• Are they all mandatory?
  – Is the project a failure if any one of them is not met?
• Do they define the product, not the project?
  – Time and money are YOUR constraints, not design constraints.
## Checklist: Goals

- Rank in order of importance
  - Rank as more/less/equally important.

- Are they quantifiable (better / worse)?
  - Can you identify if one design is better than another?
  - “Aesthetically Pleasing” is subjective. Be specific.
    - as small as possible
    - no sharp corners

- Do they define the product, not the project?
  - Learning and making money are YOUR goals, not design goals.

## RCG Evolution

- For every design decision, determine what drove the decision, and add it as an RCG.

- If an idea violates RC but solves problem, RC are flawed. Adjust RC to define the ACTUAL problem.
  - May inspire new ideas
Example: Car

- Requirement
  - Must seat 2 adults
- Constraint
  - Must fit into garage with 6ft ceiling
- Goal
  - Should seat as many adults as possible

Formal Testing

- All RC should be tested.
- Describe test procedure as a set of clear instructions that may be repeated exactly.
- Verify R&C by asking specific yes/no questions.
  - Torque > 1Nm? (yes/no) Value = ____________
- All tests must be completed BY HAND.
  - Any computer generated tick marks or names suggests that the test was pre-filled in to pass and proves nothing.