**ENG142**

**Assignment on Criteria and Constraints**

**Due September 8, 2014**

Your team has been asked to design an environmentally friendly “smart” house in New Jersey. The house should be able to support a family of four. As a team, develop a listing of design criteria and constraints that could be applied to such a design.

1. Generate a problem definition
2. a- Provide a listing of 5 design criteria

b- Provide a listing of 5 design constraints

c- fill out the attached Realistic Constraints form.

One assignment should be submitted per team. All responses should be typed. Team member names should be at top of assignment.

# **SCHOOL OF ENGINEERING The College of New Jersey**

**Realistic Constraints**

**DIRECTIONS:**

**This form should be completed by explaining how each realistic constraint would apply to the given design situation.**

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| **Realistic Constraint** | **Remarks (elaboration)** |
| **Economic** | **The fact that the house is built with 80-% recycled material saves on overhead manufacture costs (ex mining or petroleum refinement) and environmental sustainability projects are a positive externality that ultimately saves society time and resources in the long run.** |
| **Environmental** | **The fact that this smart home will leave a negative carbon foot print and the stipulation that it must be built on previously developed land are inherently beneficial to the environment.** |
| **Social** | **The environmental aspects involved will ensure a cleaner world for generations to come that society can be proud of.** |
| **Political** | **Al environmental projects are good for public relations and image.** |
| **Ethical** | **All environmental pursuits are ethical so long as they do not compromise safety and health standards.** |
| **Health and Safety** | **This smart home (if implemented) will reduce the number of pm 2.5 particles (particles small enough to penetrate the blood stream via the lungs) in the air subsequently improving public health.** |
| **Manufacturability** | **This smart home will be built with recycled materials rather than requiring the logistics involved in sourcing materials.** |
| **Sustainability** | **The power generation capabilities of the house will ensure that the environment is sustainable. As for the house it’s self the recycled plastic polymers used are far more resilient than traditional materials like lumber and dry wall.** |