

IPRO 315- Design of a Large-Scale Structure

Overarching Principle: “Help the IIT community save time and land used for parking by designing a safe, self-sufficient, and automated parking garage.”

1) Law

Canon: The team will abide by all state and federal laws and regulations to ensure a safe and functional structure.

Pressure: Completing the project quickly and cost efficiently.

Risk: Cutting corners on re-checking design calculations in order to save time.

Risk: Using cheaper materials of lesser quality.

Measure: Compliance with this canon will be measured by the absence of legal actions against the team.

2) Contracts

Canon: The team will entirely fulfill all agreements with clients and contractors within the time constraints set.

Pressure: Maintaining a good reputation as a ground-breaking company.

Risk: Lying to clients about progress.

Risk: Passing past work of other teams off as their own to the client.

Measure: All contracts will be available to all team members to view at any time.

Compliance with the contracts will be measured by the absence of complaints or concerns brought to the team leader.

3) Professional Codes

Canon: All team members are expected to know and follow all NSPE (National Society of Professional Engineers) guidelines and codes of conduct.

Pressure: Lowering costs.

Risk: Not “holding paramount the safety, health, and welfare of the public” by using inferior materials or design that may cause the building to be unsafe.

Pressure: Obtaining good publicity.

Risk: Lying to the press/public about the benefits to the community or the progress of the project, thereby violating the NSPE code stating “Engineers shall issue public statements only in an objective and truthful manner.”

Measure: All team members will be trained and certified on the NSPE code of conduct and bi-weekly reviews of complaints against the team will be held to ensure compliance with this canon.

4) Industry Standards

Canon: The team will adhere to the construction standards set by the Construction Specifications Institute and the design/materials standards set by the American Society of Civil Engineers and American Society for Testing and Materials.

Pressure: Completing the project by deadline.

Risk: Using quicker but non-recognized methods of construction or design.

Pressure: Reducing Costs.

Risk: Using materials that are not recognized under ASCE or ASTM because they are cheaper.

Measure: Any complaints against the team will be checked against ASCE and ASTM standards. Compliance with this canon will be measured by the absence of complaints forwarded to ASCE/ASTM for review.

5) Community

Canon: The team will not inconvenience the IIT community unnecessarily during any process of work before completion of the structure.

Pressure: Attracting attention to the project.

Risk: Using unnecessarily large equipment that blocks traffic to make the project more visible and more important looking.

Risk: Putting up advertisement signs or unnecessary ‘safety’ fences that would block walkways or streets.

Measure: Compliance with this canon will be measured by the absence of complaints from the IIT community to the team or through the local newspaper.

6) Personal Relationships

Canon: All team members will work respectfully and honestly with all other members of the team and any person/company associated with the project.

Pressure: Making oneself look good to the team leader and/or the public.

Risk: Passing off others work as his/her own.

Risk: Putting the responsibility of his/her mistakes onto other members of the team.

Measure: All team members will be encouraged to work together in small teams where unethical behavior can be easily seen and brought to the team leader’s attention.

Compliance with this canon will be measured by the absence of complaints about team members to the team leader.

7) Personal/Moral Values

Canon: The team will not pry into fellow team member’s personal, religious, or moral values and will not ask any member to violate those values.

Pressure: Meeting as often as possible to complete the project faster.

Risk: Requiring team members to spend less time with families so that the team can work on the project on weekends.

Risk: Requiring team members to meet on Sundays, impinging on the religious values of the team members who observe Sunday as a day of rest.

Measure: It will be made clear to the team members that actions that might intrude on other’s values will not be acceptable and the team leader will be notified if such occurs.

Compliance with this canon will be measured by the absence of complaints to the team leader.